

JOURNAL
OF THE
ASIATIC SOCIETY.

PART II.—PHYSICAL SCIENCE.

No. IV.—1870.

A CONTRIBUTION TO MALAYAN ORNITHOLOGY,—by DR. F. STOLICZKA,
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[Received and read, 6th July, 1870.]

A short visit to the Malay Peninsula, during the latter part of 1869, gave me an opportunity of observing a portion of the fauna of that country. While staying at Penang, and on a short trip into the Wellesley Province, I noticed among others a large number of birds, which seemed to me to possess great affinities to Indian forms, but at the same time to exhibit some peculiarities. Knowing that this part of the Malayan country was as yet very little explored, but not being able to prolong my stay in that locality for even a few days, I engaged a collector for about a month, and sent him into the interior of the Province, instructing him to direct his attention especially,—as far as birds were concerned,—to the smaller kinds. After my return from Malacca and Singapore, I found that the trial was not quite without success, and I met my collector with more than 300 specimens of bird skins. These proved to belong to nearly one hundred species, and the following notes are offered on such as appear to possess a more general interest. Others are only referred to by name, as being interesting in a point of geographical distribution, for with the

exception of a number of species quoted by Blyth, Horsfield and Moore, and others, from Penang, very few birds appear to have been received from the Wellesley Province, which is geographically situated between Tenasserim and the well known Malayan country about Malacca.

The avifauna of the Burmese and Tenasserim Provinces has been ably worked by Blyth, with the assistance of Col. Tickell, Sir A. Phayre and many others. To the Malayan fauna about Malacca Mr. Blyth's labours have equally contributed very largely; his "Catalogue of the Birds in the Asiatic Society's Museum" is a valuable mine of information, and it is indeed not easy to hit upon a species which this most zealous naturalist had not already placed on record as occurring in those regions. Almost every one of the earlier volumes of our Journal bears testimony to this.

Through several Dutch collectors, large numbers of Malacca birds had gone to Europe many years before they reached Calcutta, and in fact Malacca birds (generally stated to be from Singapore, because shipped from that port), are among the most common in European Museums. Many new species and interesting new genera have been described by Mr. Eytton, (P. Z. S., Lond., 1839 and Ann. and Mag. 1845, vol. xvi), by Strickland, (Ann. and M. N. H., 1844, vol. xiii and 1847, vol. xix,) Hartlaub, (Rev. Zool., 1842 and 1844), Lord Hay (Madras Jour. vol. xiii,) and by a few others.

The Malaccan fauna was known to be most closely allied to that of Java and Sumatra, which has been so successfully worked out by Horsfield and Sir Raffles, and afterwards by Temminck in his Pl. Col. It is comparatively only within a recent period that ornithologists are attempting to increase the number of species by the discovery of minutious characters between the insular and continental Malayan forms, but I do not think that this attempt will be followed by very great success, as far as the creation of new species is concerned, though the fact of these differences really existing is, no doubt, of very great interest. It cannot be questioned for one moment, that the most intimate relation exists between the avifauna of Sumatra, Java, the greatest part of Borneo and the Malayan peninsula from Singapore to

Malacca, and, I can add, extending as far north as the Wellesley Province and including the island of Penang. More than one-half of the species are absolutely the same, and many others have very marked affinities. Several of the species which characterize this part of the fauna, like many peculiar CAPITONIDÆ, PICIDÆ, and COLUMBIDÆ (TRERONINÆ) etc., do not extend further north, but others do so, and again some of the species and genera are replaced by closely allied types. Several of the birds noted from the Wellesley province represent intermediate types between the northern Indo-Burmese and the southern Malayan forms, and are on that account particularly interesting, as will be seen from a comparison of the details given further on.

Indeed these intermediate local forms are the most important in the study of a fauna, for they are the only reliable records upon which the explanation of the origin of local faunas must be based, and their connection with the faunas of the neighbouring countries. And still more: they are to a great extent the basis of a good classification, for upon the correct determination of these local variations and their constancy actually rests the limitation of the term species. Bearing this in view, I have added exact measurements of all the birds I noted, and more detailed descriptions of some others which appear either to represent peculiar varieties, or seem otherwise to be interesting in a comparison with Indian birds.

It is an established fact that British India* is peopled by two markedly distinct faunas. The fauna of nearly the whole of the provinces to the east of the Ganges and Húgli, stretching N. W. somewhat along the base of the Himalayas, is Malayan, the Malayan character gradually diminishing, or altering, the more the fauna proceeds towards west or north-west. I may say that about one-fourth of the birds in this great Malayan province are identical as to species. Some which appear to be rather inclined to an insular habitat seem to decrease in size when they proceed northwards; but as a rule, the same species, when it enters India, seems again to develop to a large form. This fact should not be unduly appreciated, for taking the fauna of each small province independently of that of the other,

* Excluding the Western Punjab country which has strong European affinities.

it is not difficult to consider the local races as specifically distinct. In this way a bird in India is sometimes made the type of one species, the same slightly varying in Burma the type of another, a third one in the Malay Peninsula, and a fourth one often in Java and the other islands. Such artificial specific distinctions may look very well in a Catalogue of birds, or on the labels in a museum, where perhaps one or two specimens from distant localities are considered to indicate an unusual richness of the collection, but they are far from sufficient to illustrate the fauna of a province, and those so-called species often have no existence in nature. I shall relate some instances of this kind, and indicate others, though, naturally, my present materials are very limited, but I believe that in many cases the gradual change from one form to the other will be satisfactorily proved, as soon as we become properly acquainted with the fauna of the intervening districts. In any case the one general fact that the original and prevalent character of the fauna of Eastern and South-Eastern British India is very closely allied to that of the southern Malay countries, wherefrom the fauna appears to have migrated to north and north-west, should not be lost sight of by any one desiring to multiply the existing number of known species from those regions.

Considerably different is the fauna of Southern and South-Western India, which is known to possess in part a strong African admixture. The only exception to this partially forms the fauna of some of the elevated districts of Southern India and of the Malabar coast. This latter again shews affinities to the eastern Malay fauna, and the question how that isolated Malay fauna came into existence, becomes of equally high interest as the one is with regard to the admixture of African element into the rest of the Indian fauna. Was the fauna of the whole of India at one time Malayan? Was it partially destroyed, or was its development otherwise arrested through some past geological catastrophe, such as that appears to be which must have affected India during the so-called trappean deposits, extending over the greater part of Central and Southern India? Certainly these enormous volcanic operations must have had great effect upon the fauna, as well as the flora. After, or in relation with these catastrophes, the presumed connection of India

with Africa may have taken place, to which Professor Huxley in his recent (1870) address to the Geological Society made allusion. At that time, the African fauna began to immigrate, partially mixed with, and in the plain country partially also suppressed the remaining elements of the original Malay fauna which could not have been sufficiently quickly nourished from the east, as the waters of the Bay of Bengal have probably at that time washed the bases of the yet little elevated Himalaya mountains, and thus maintained a separation of the two faunas. By all these operations the fauna of the more elevated Southern Indian districts appears to have been little affected.—These are of course mere speculations, but they have a high degree of probability, supported by the differences in the fauna, which were pointed out several years ago by Mr. W. T. Blanford.

Fam. FALCONIDÆ.

1. *HIERAX FRINGILLARIUS*, D r a p.

Wing very nearly $3\frac{1}{2}$ " , tail $2\frac{1}{8}$ " , tarsus $\frac{11}{16}$."

A Malacca specimen exactly corresponds with D r a p i e z ' s figure on pl. 21 of Dictionaire Class. d'hist. naturelle. The Javanese *Hierax*, called *H. cœrulescens*, L i n n., as figured by H o r s f i e l d in his "Researches in Java," and generally identified with the above species, would appear to be a different bird. It is considerably larger, the loreal region in front of the eye is white, the last tertiaries white spotted, and the white bars on the inner webs of the other wing feathers more numerous, while *fringillarius* has the loreal region black, the white supraciliary ridge above the eye interrupted, and the last tertiaries almost wholly black. In other respects both are (except size) almost identical, the tibial feathers being black externally and rufous brown internally, (see also Hume, in "Scrap Book," Calcutta, 1869, p. 111).

Should the larger Java bird be the female of *fringillarius*? It is difficult to arrive at any very satisfactory conclusion on this point. T e m m i n c k ' s figure in the Pl. Col. represents a bird, the wing of which is about $3\frac{5}{8}$ " ; one specimen has the white supraciliary band nearly interrupted above the eye, the other has it distinctly continuous. A specimen, in the Society's collection, from

Malacca has the wing 4", and one from Java $4\frac{1}{8}$ ", both have the supraciliary stripe interrupted, and the loreal region black, therefore, agree with typical *fringillarius*, except that they are larger. Possibly, the black of the loreal region and above the eye, suppressing the development of the white supraciliary stripe, is only an occasional face of plumage, or it indicates a distinction of the sexes, or a local variation; it seems, however, pretty certain that the Javanese bird is somewhat larger than the Malayan. Whatever the case may be, whether there be one or two distinct species, or only varieties, of the *black-legged Hierax*, I do not understand how it came, that Linné's name *cærulescens* has been almost universally adopted for the Malayan birds. The name appears to have been introduced through Horsfield's and Temminck's illustrations, though Horsfield (Res. Java) very properly pointed out the distinctions between his and Linné's *cærulescens*. Judging from the 13th edition (by Gmelin) of the Syst. nat., Linné's name has been based upon Edwards' figure (Nat. Hist. Birds, pl. 108), which was taken from a Bengal specimen and clearly represents the *red-legged Hierax* (*H. eulomus* of Hodgson) and, therefore, it should be reserved for the Indian species, but not applied to the Malayan (and Java) form with *black* tibial feathers, which is *fringillarius* of Drapez, a name originally adopted by Blyth, but afterwards replaced by that of *cærulescens*.

Fam. PSITTACIDÆ.

2. LORICULUS GULGULUS, Linn.

This is a somewhat smaller bird than *L. vernalis*, Sparrm., but very like it, and young birds can hardly be separated; wing $2\frac{1}{4}$ "- $2\frac{3}{8}$ "; tail $1\frac{3}{8}$ "; usually with some bluish tinge in front and on the top of the head, and on the middle throat, a golden tinge on the posterior neck, as well as on the upper vent in front of the scarlet patch. The blue patch on top of head appears characteristic of the bird in full plumage. The species is very common in the Wellesley Province, and is often caged by the Malays of the country. An albino specimen shot there has the whole plumage very much mixed with yellowish white, the longer wing coverts deep green, the quills mostly white and edged with greenish and yellow on the

outer webs; on the top of head are many feathers partially scarlet, almost forming a round patch of red, as in *L. vernalis*.

Fam. CAPRIMULGIDÆ.

3. CAPRIMULGUS MACROURUS, Horsf.

Jerdon, B. Ind., I, p. 168.

Wing $7\frac{1}{2}$ " , tail $5\frac{3}{4}$ " ; bill at front $\frac{3}{8}$ " , from gape $1\frac{1}{4}$ " , tarsus $\frac{9}{16}$.

Wellesley Province and Penang.

Fam. TROGONIDÆ.

4. HARPACTES DIARDI, Temm.

Gould, B. Asia., pt. XVII.

This is one of the most common species in the forests east of Malacca. The carmine colour on the vent is in the female greatly mixed with white, and the sides of the vent with ashy brown, the external and terminal lower tail coverts are almost wholly ashy brown; the white tips to the outer tail feathers are considerably less freckled with black in the ♀ than they are in the ♂. One ♀ has one of the central tail feathers wholly brown, another has them tipped black, almost quite as much as in the male.

5. HARPACTES KASUMBA, Raffles?

Gould, B. Asia, pt. VIII.

A female specimen shot by my collector in the Wellesley Province is intermediate between the figures of the females of *Kasumba* and *fasciatus*, as given by Gould. The head is darkish brown, occiput behind, neck and back dark rufescent brown, very indistinctly and minutely barred across with dark, purely rufescent brown or rather yellowish brown on the vent and on the upper tail coverts. Wings black, all the superior coverts and tertiaries with light brown cross bars, as in typical *Kasumba*, but the bars are decidedly broader, (while they are almost minute in *fasciatus*); primaries (except the first) very distinctly edged with pure white; two central tail feathers wholly brown (as in *fasciatus*), next black, but brown along the quills, on the extreme outer edge and near the tip; the third is black with a brown quill and outer tip; the other outer tail feathers are black, broadly tipped with white which increases externally, the outer web of the outermost feather being almost wholly white;

chin and breast greyish-, or rather dull olivaceous brown, like in *Kasumba*, but with barely any white gorget bordering it, as in *fasciatus*; the rest of the lower parts is uniform fulvous brown, very much like in the last named species; wing very nearly $5\frac{3}{4}$ " ; tail $6\frac{3}{4}$ " ; bill at front $\frac{9}{16}$, from gape $1\frac{1}{8}$ " ; tarsus $\frac{1}{2}$ ".

Though in coloration this specimen resembles almost quite as much the Ceylon *fasciatus*, as it does agree with the Malayan *Kasumba*, it seems much more probable that it belongs to the latter species, with which the form of the bars on the wing coverts and the measurements of the bird better agree. At the same time it does not appear, from the account given, improbable, that a new form is here indicated, of which the male is not yet known. Unfortunately all the specimens of the allied species in our Museum are so insufficient, that they do not admit of a very close comparison. None of the female specimens exactly agree with our bird, but that of *Kasumba* comes nearest to it.

Fam. EURYLAIMIDÆ.

6. CALYPTOMENA VIRIDIS, R a f f l.

H o r s f i e l d, Research. in Java, fig. of ♂.

Male — bright shining green, somewhat deeper on the back and considerably paler on the vent and lower tail coverts, a small yellow spot in front and above the eye, a larger black spot on the sides of the neck behind the base of the mandible, the wing coverts with large cross subterminal black spots forming three oblique bands, the black not extending on the few first or marginal coverts; shoulder edge of wing blackish green. The first three or four primaries are dusky brown, edged with green on the outer web, the other wing feathers are deep brownish black and the green gradually increases, until the last tertiaries become almost wholly green on the terminal half; tail green above, bluish below. The lateral front feathers of the head are obliquely erect towards each other, forming a crest above the bill and entirely concealing the nostrils, only the curved tip of the bill remaining visible; these erect green feathers are pure black for the lower half, and the other green feathers gradually become paler at their bases as they proceed posteriorly; the internal side of the green is always bluish.

Raffles says the female does not differ in appearance from the male. I first obtained this species from Malacca, where it did not seem to be common, and from the forests of the Wellesley Province my collector brought seven specimens, one of which is a male in full plumage, the others were pointed out by him to be females. They equal in size the ♂, and all very closely resemble it in colouring, except that the green is duller throughout, the yellow spot in front of the eye very small, most of the feathers forming the orbit pale yellowish green, and the black spots on the neck and wing coverts are almost entirely absent; the crest at the base of the bill is also smaller. Four of the six specimens appear by the development of the bill and toes to be old birds, and can, I think, be safely considered as the ♀s, but two appear to be young ♂s, changing their plumage to a brighter green, while the black spots on the neck and on the coverts also begin to make their appearance. All specimens have 12 subequal tail feathers, not 10, as noted by Raffles; the former being the usual one in other EURYLAIMIDÆ also.

Wing 4", tail $1\frac{3}{4}$ "-2", bill from gape 1", width of gape $\frac{3}{4}$ " to $\frac{7}{8}$ ".

This species is one of the most marked birds indicating the affinities of the Malayan continental fauna to that of the adjacent islands. Its general character certainly agrees best with the Malayan EURYLAIMIDÆ, though the external appearance of the bird is like that of a Parocett.

7. CORYDON SUMATRANUS, R a f f l e s.

G o u l d, B. Asia, pt. V.

Apparently not common in the Wellesley Province; perfectly identical with Sumatran specimens.

8. CYMBIRHYNCHUS MACRORHYNCHUS, G m e l.

G o u l d, B. Asia, pt. V.

Common near Malacca and in the Wellesley Province and Penang. One specimen has all the wing-coverts tipped white; this is probably a sign of immaturity, as the same specimen has not the white scapulars developed to their full length. The crimson colour below is on the chest and especially on the lower belly often mixed with a yellowish tinge; wing $3\frac{3}{4}$ inch, tail about the same.

9. EURYLAIMUS OCHROMALUS, R a f f l.

G o u l d, Birds of Asia, pt. V.

The pale collar is generally vinaceous pink below, quite white above, and in most specimens which I saw, from Malacca and the Wellesley Province, almost interrupted in the middle of the neck above. The white subterminal spots extend over both webs on the outermost tail feathers, and are, as likewise the small spot at the base of the primaries, often of a pale sulphur yellow. Some specimens have a few white feathers below and somewhat posterior to the eye. The upper bill is laterally partially yellow, this color extending up to near the tip. Both upper and lower mandibles are emarginated near the tip; length of wing $3-3\frac{1}{2}$ inch., tail $2-2\frac{1}{8}$ ".

Fam. CUCULIDÆ.

10. PHENICOPHAUS CURVIROSTRIS, S h a w.

B l y t h, Cat. p. 75, and Journ. Asiat. Soc., Beng., XI, p. 927.

Very common about Malacca and in the Wellesley Province. Total length between 17 and 18 inches; wing $6\frac{1}{2}'-6\frac{5}{8}"$; tail $10''-10\frac{3}{4}"$, the two central feathers being either wholly metallic green, or terminally for about $\frac{2}{5}$ th their length tipped with brown; bill very strong, curved, about $1\frac{1}{2}"$ at front, $2\frac{3}{4}"$ from gape; tarsus $1\frac{1}{2}"$. The extreme edgings of the feathers round the red naked space of the eye are always white in full plumaged birds. The chin is white in some, grey in other specimens.

11. PHENICOPHAUS [ZANCLOSTOMUS] DIARDI, L e s s.

B l y t h, Cat. p. 76.

Common about Malacca and in the Wellesley Province, but apparently, like the last species, not extending farther north. It is very closely allied to R a f f l e s' *Ph. Sumatranus*, but a little smaller and with no rufous colour below. The edgings round the red naked space of the eye are white, more distinct above than below, but not developed in the young bird. Wing $5''-5\frac{1}{8}"$; tail $9''$; bill at front $1''-1\frac{1}{8}"$, from gape $1\frac{5}{16}"$; tarsus $1\frac{3}{16}"$.

12. RHINORTA CHLOROPHÆA, R a f f l.

B l y t h, J. Asiat. Soc. Beng. XI, 923-924, and Cat. p. 76.

It is remarkable that, though I observed these birds repeatedly

in the brushwoods near the coast of the Wellesley Province and at Malacca, I hardly ever saw the two sexes (δ , *Phœnicoph. viridirostris*, Eyt on, or *Bubutus Isidorei*, L e s s., and ♀ , *Ph. chlorophæa*, R a f f l.) together; neither have I seen any of the birds with intermediate plumage.

The species is very common in the Wellesley Province, and of 8 specimens from that locality (3 δ and 5 ♀) none has the wing more than $4\frac{3}{8}$ " , mostly only $4\frac{1}{4}$ " ; tail $6\frac{1}{2}$ "-7" ; bill at front 1" , from gape $1\frac{5}{16}$ " ; tarsus 1" .

13. EUDYNAMYS ORIENTALIS, L i n n.

J e r d o n, B. Ind., vol. I, p. 342.

Does not appear to be common; a male has the tarsus $1\frac{1}{4}$ " , wing very nearly and the tail fully 8 inches, which is slightly in excess of the measurement noted by J e r d o n, but it agrees with that given of the female.

Fam. CAPITONIDÆ.

14. CYANOPS CHRYSOPOGON, T e m m.

Planches Col. 285.

Specimens from the Wellesley Province, where the species appears common, measure: wing $4\frac{7}{8}$ "-5" ; tail $2\frac{1}{2}$ "- $2\frac{5}{8}$ " ; bill at front very nearly $1\frac{3}{4}$ " , from gape $2\frac{1}{4}$ " ; greatest length of narine bristles $1\frac{1}{4}$ " ; tarsus $1\frac{1}{4}$ - $1\frac{5}{16}$ " .

Front of head yellowish silvery white, lores interrupted across the culmen crimson, posterior crown and occiput spotted crimson, each feather being black, then blue and terminally crimson, rest of upper plumage deep green, below paler, on neck with a golden glossy tinge, quills terminally and all wing feathers internally blackish, fulvous at their bases and internally, superciliary stripes, cheek and ear-coverts dark silvery brown, occiput margined blue, broad mustachial streak bright yellow, chin extending somewhat posteriorly silvery grey, bordered posteriorly with blue; tail internally blue.

15. CYANOPS VERSICOLOR, R a f f l.

Trans. L i n n. Soc XIII, pt. II, p. 284.

Common on the islands Sumatra, Borneo, Java, about Singapore

and Malacca, but I have not obtained it from farther North. Malacca specimens measure : wing $4\frac{5}{8}$ " ; tail $2\frac{1}{8}$ " ; bill at front $1\frac{3}{8}$ " , from gape very nearly 2" , tarsus very nearly $1\frac{1}{8}$ " , the longest bristles reach beyond the tip of the bill.

16. CYANOPS MYSTICOPHANES, T e m m.

Bucco quadricolor, E y t o n, Proc. Zool. Soc., Lond., 1839, p. 105.

E y t o n ' s description applies to the bird in full plumage. The forehead and a short mustachial streak are golden yellow, lores, top of head and occiput, chin and front of throat and a spot on each side of the front breast deep crimson, supraciliaries, cheeks and throat azure blue ; streak through the eye blackish ; general colour above deep green, paler grass green below, all the feathers on the neck and front breast with a golden lustre, quills slightly margined with fulvous on the outer web, all wing feathers blackish brown on the inner webs and margined fulvous, this being especially conspicuous on the inner side of the wings ; tail below bluish green. T e m m i n c k ' s figure does not shew the coloration of the head clear enough.

In other (? female) specimens with the green plumage perfectly developed, the front part of the head is partially greenish, partially yellow, sometimes intermixed with blue ; chin and front throat are yellow, intermixed with red, the mustachial streak is like the cheek blue, the crimson on the occiput is of smaller extent.

This species is common at Malacca, Penang, and in the Wellesley Province. Wing $3\frac{3}{4}$ "- $3\frac{7}{8}$ " ; tail $2\frac{3}{16}$ "- $2\frac{3}{8}$ " ; bill at front $1\frac{1}{4}$ " , from gape $1\frac{3}{4}$ " ; tarsus 1" ; the longest bristles slightly reach beyond the tip of the bill.

H a r t l a u b ' s description of his *Bucco Malaccensis* seems to indicate a distinct and smaller species.

17. XANTHOLEMA DUVAUCELII, L e s s.

B. frontalis, T e m m., Planches Col. 536, fig. 1.

Head including lores and occiput blue, somewhat dusky in front, a short stripe behind the supraciliary edge, cheek in front and mustachial stripe crimson, behind the eye and ear-coverts greenish, tinged blue, chin and throat in front purely greenish blue, with a very small dark gorget ; rest of plumage above deep green, below yel-

lowish green, especially on the breast; wing $2\frac{7}{8}$ " ; tail $1\frac{1}{2}$ " ; bill at front $\frac{3}{4}$ " , from gape $1\frac{1}{8}$ " , tarsus nearly $\frac{3}{4}$ " ; rectal bristles nearly double the length of the bill.

Another specimen of equal size (? a ♀ or immature) is green above with a scarcely traceable tinge of blue on top of head, chin cinereous blue with a black gorget on the throat; breast yellowish green, the rest dusky green; size about the same as of the last.

18. XANTHOLEMA INDICA, L a t h.

J e r d o n, B. Ind., vol. I, p. 315.

This species does not appear to be so common in the Malay peninsula, as the various *Cyanops*. Specimens from the Well. Province, Penang and Malacca quite agree with the Indian bird.

19. MEGALORHYNCHUS HAYII, G r a y.

Meg. spinosus, E y t o n, Proc. Zool. S., Lond., 1839, p. 106.

I have not seen this species from farther North than Malacca; wing $3\frac{1}{4}$ " ; tail $1\frac{7}{8}$ " ; bill at front $\frac{7}{8}$ " , from gape $1\frac{3}{16}$ " ; tarsus $\frac{7}{8}$ " .

It is most probably the *Bucco Lathamii*, (G m e l.) of R a f f l e s, who states that it is also found in the interior of Sumatra.

Fam. PICIDÆ.

20. TIGA "RUFÆ,"* R a f f l.

Tiga tridactyla, K a u p (1836), B l y t h. J. Asiat. Soc. XIV, p. 193, *Chrisopicoides tige* apud M a l h e r b e, Mon. PICIDÆ.

* Genus *Tiga*, K a u p, 1836, *Chrysonotus*, S w a i n s o n, 1837, *Chrisopicoides*, M a l h., 1849 — What does Raffles mean (Trans. L. Soc. XIII, 1822, p. 290) by the quotation "PICUS TIGA" (H o r s f i e l d) "Tukhi besar, or *T. rufa*," and immediately after that he refers to the generic peculiarity of *Tiga* as distinct from *Picoides* (*P. tridactylus*, L i n n.). Does that last reference mean *Tiga rufa*, or what? I do not think that it could justly be presumed that Raffles refers to *Picus rufus*, G m e l. At the same time it would be impossible to say positively what Raffles meant by the generic name "T.," whether "*Tiga* or *Tukhi*," unless his originally labelled specimens could be found. But what other than a specific appellation could be assigned to the second name "*rufa*?" Whatever the case may be, this last name would be more acceptable than "*tridactyla*," because all other *Tiga* also have only three toes. The only objection to the name "*rufa*" may be made on the ground that Raffles had a specimen of *T. intermedia*, B l y t h, before him, as the measurements of the bird he gives are rather those of the form designated by Blyth with the last name, and which, Blyth says, occurs in Java. However, it seems very difficult to discriminate between *tridactyla* and *intermedia*, when large series are compared, and I am not certain whether it is correct to separate them specifically.

Blyth says (Ibis, 1866, II, 356) that his *T. intermedia*, (see Jerdon, B. Ind. I, 299) also occurs in Java and extends to Penang, but is replaced at Malacca,—which is geographically intermediate between the two countries—by *T. tridactyla*! The latter species appears to be very common in the Wellesley Province and on Penang island where I obtained it. The colouring is typical, except that the back is in some specimens bright crimson, in others (often slightly larger), scarcely so, being almost pure golden yellow. This last character has been assigned as characteristic of Blyth's *intermedia*, but none of our specimens attain the size recorded of that species. The white spots on the head of the females (the larger race) are very elongated, pointed above, somewhat obtuse below, but very distinct on the whole head. The measurements vary in seven different specimens as follows: wing $4\frac{7}{8}$ "— $5\frac{1}{4}$ "; tail $3\frac{3}{4}$ "—4"; bill at front $\frac{7}{8}$ "— $1\frac{1}{16}$ "; tarsus $\frac{1}{16}$ "— $\frac{1}{16}$ ". The bill and tarsus appear to be sometimes shorter in the ♀ than in ♂. Thus the length of wing varies in *tridactyla* between $4\frac{7}{8}$ and $5\frac{1}{4}$ inches and that of *intermedia* is stated to be $5\frac{1}{2}$ ". Some of the specimens in the Museum, labelled as *intermedia*, have it barely $5\frac{1}{2}$ ".

21. TIGA RAFFLESI,* Vig.

Strickland in Ann. and Mag. N. H., XIX, 1847, p. 133, and Blyth, Jour. As. Soc. XV, p. 16.

Apparently not common in the Wellesley Province and on Penang. A ♀ measures: wing $5\frac{1}{2}$ "; tail about $4\frac{3}{4}$ "; bill at front $1\frac{3}{16}$ " from gape $1\frac{1}{2}$ ", at base $\frac{3}{8}$ " high and equally broad; tarsus $\frac{7}{8}$ ". The colouring exactly agrees with Blyth's description.

22. HEMILOPHUS JAVENSIS, Horsf.

Trans. Linn. Soc. XIII, p. 175; *Muelleripicus*, Bonap., apud Jerdon. *Megapicus leucogaster*, Reinw.—Malherbe Mon. *Picidae*, p. 47.

A specimen from the Wellesley Province in full plumage has the lower parts, including the sides, fulvous white, lower tail coverts black, and the feathers in front of them as well as those on the tibia spotted black; it measures—wing 9", tail along the central fea-

* *Chloropicoides Rafflesii* apud Malherbe.

thers $7\frac{1}{4}$ " ; bill at front $2\frac{1}{8}$ " ; from gape $2\frac{3}{8}$ " , at base $\frac{9}{16}$ " high and $\frac{1}{16}$ " broad ; tarsus $1\frac{3}{8}$ " .

A Malacca specimen, probably an undeveloped male, has the head above only partially crimson, occiput distinctly crimson and the feathers elongated ; stripe at the base of the lower mandible black, vent very slightly fulvous, almost pure white, tips of the primaries dusky ; wing $8\frac{1}{4}$ " ; tail 6" ; bill at front $1\frac{7}{8}$ " , from gape $2\frac{1}{8}$ " , at base $\frac{1}{2}$ " high and a little more than $\frac{1}{16}$ " broad ; tarsus $1\frac{5}{16}$ " .

In both, but especially in the first specimen, the lower fulvous white reaches laterally high up, leaving only a narrow black stripe along the middle of the rump, which is wholly white in the South Indian *H. Hodgsoni*, J e r d., and the Burmese *H. Feddeni*,* Blyth, the latter differing solely from the Indian form by having a little more white on the internal wing feathers.

M a l h e r b e questions the correctness of Blyth's reference "Tenasserim" concerning *H. Javensis*, but does not give his reason for it. Evidently he entertains the idea that the true Malayan fauna stops at Malacca, and that the Burmese and Tenasserim fauna is what is generally called Indian.

23. HEMILOPHUS [REINWARDTIPICUS] VALIDUS, R e i n w.

Pl. Col. 378 and 402 ; Blyth, Cat. 54, No. 240 ; M a l h e r b e, Mon. Pic. I, p. 28.

Common in the Wellesley Province ; Blyth says "Western Malasia." S c l a t e r (Proc. Z. Soc. Lond. 1863, p. 211) gives it from Borneo.

♂. Wing $6\frac{2}{3}$ " ; tail $3\frac{1}{2}$ — $3\frac{3}{4}$ " ; bill at front $1\frac{9}{16}$ " , from gape $1\frac{7}{8}$ " ; tarsus $1\frac{1}{16}$ " ; outer hind-toe including claw $1\frac{1}{2}$ " . The ♀ is often slightly smaller, the corresponding measurements are 6" to $6\frac{2}{3}$ " ; $3\frac{1}{2}$; $1\frac{1}{2}$; $1\frac{13}{16}$; $1\frac{1}{16}$; $1\frac{5}{8}$.

The lateral ridges on the front part of the bill are double, and continue up to the tip which is high and laterally compressed. As regards the shape of the bill, there is no difference between that of the present species, and that of typical *Hemilophus*, but while in this one the versatile toe is shorter than the middle one, it is longer in *Reinwardtipicus*, which is exactly intermediate between *Chrysocolaptes* and *Hemilophus*, where J e r d o n placed it.

* Journal A. S. B., 1863, vol. xxxii, p. 75.

Malherbe's figures could hardly have been taken from fresh or well preserved specimens, unless they represent unusual varieties. I never saw the female so pale coloured, as shewn by Malherbe.

♂. Crown of head extending down the occiput with a moderate crest crimson, back and rump bright orange yellow, wings with the scapulars and coverts dark brown with five brown bands, the basal very small; fore head, sides of head including a narrow supraciliary stripe, and below extending on the chin, golden yellow, most distinct on the mustachial streak, becoming brownish on the ear-coverts and posterior to them; median chin stripe and the whole plumage below more or less bright crimson; upper tail coverts and tail black; lower tail coverts mostly brown.

♀. Above, head, neck, wings blackish brown, the latter with five brown bands, the basal almost obsolete; whole back and rump white; upper tail coverts and tail black; sides of head and chin ashy white, median chin striped and the whole of the lower plumage ashy brown.

24. CHRYSOPHLEGMA MENTALIS, Temm.

Pl. Col. 384, and Malherbe Mon. *Picidæ*.

Temmink in his figure gives the throat almost wholly black. The Malayan specimens from the Wellesley Province have it always only black striped, as shewn in Malherbe's drawing; but I have not seen the brown color at the sides of the throat and of the front breast extending above the eye; it extends up to the eye but not on the supraciliary edge itself. The forehead is in ♂♂ somewhat brownish and the crown dingy green.

Specimens from the Wellesley Province vary in size:—wing $5\frac{1}{4}$ " — $5\frac{3}{8}$ "; tail along the central feathers $3\frac{3}{4}$ " to 4"; bill at front $1\frac{1}{8}$ " — $1\frac{2}{8}$ "; from gape $1\frac{1}{2}$ " — $1\frac{9}{16}$ "; tarsus $1\frac{1}{16}$ "; inner toe barely $\frac{1}{2}$ "; versatile toe slightly shorter than the median one.

25. CHRYSOPHLEGMA MALACCENSIS, Lath.

Venilia malaccensis, Sclater, Proc. Zool. Soc. Lond., 1863, p. 211, from Borneo.

For description see Blyth in Journ. Asiat. Soc. XIV, p. 192.

I got this species only from Malacca, it does not appear to extend farther North.

26. VENILIA PORPHYROMELAS, B o i e.

Celeopicus porphyromelas, M a l h e r b e, Mon. Pic. II, p. 39; *Picus rubiginosus*, E y t o n, Ann. and Mag. N. H., XVI, Octb. 1845, p. 229; *Picus melanogaster*, A. H a y, Madras Journal, 1845, XIII, pt. II, p. 153.

The species does not appear to be common. Specimens from Malacca and the Wellesley Province quite agree with Lord H a y's description and measurements. Old males have some of the mustachial feathers posteriorly crimson, which M a l h e r b e denies, but they certainly are present in ♂ with full plumage. Judging from M a l h e r b e's figure, he could not have had a full grown ♂, for in this the upper plumage, especially on the scapulars and the outer webs of the wing feathers, is very distinctly deep crimson. The first quill is $1\frac{1}{2}$ " , the second $1\frac{3}{4}$ " longer, the third again $\frac{1}{16}$ " longer, the fourth again $\frac{2}{8}$ " longer, and the fifth again $\frac{1}{8}$ " longer and subequal to the sixth; the four central feathers are pointed and subequal, the next outer somewhat shorter and obtuse, the following rounded. Bill yellowish white, dark greenish at the base, strongly compressed at tip; feet brownish black.

27. MICROPTERNUS BADIUS, R a f f l e s.

Linn. Trans. XIII, pt. II, p. 289.

27a. MICROPTERNUS BRACHYURUS, V i e i l l.

M a l h e r b e, Mon. PICIDÆ, II, p. 5.

It does not appear very improbable that these two species are really distinct. A Malacca specimen agrees perfectly with the short account which R a f f l e s gives of his *badius*; the head above and below is somewhat pale, the rest of plumage rufous brown, the cheek below the eye is spotted with crimson; the feathers on the chin are broadly margined with very pale rufous; the breast is unspotted, the vent with tolerably distinct cross bars; wing $4\frac{5}{16}$ "; tail $2\frac{1}{4}$ "; bill at front $\frac{1}{16}$ " , from gape nearly $1\frac{1}{8}$ "; tarsus $\frac{3}{4}$ ".

Another specimen from the Wellesley Province has the plumage throughout of a deeper hue, the head above is rather dark brown; the throat is also darker, each feather being rufous brown in the middle, then blackish, to which follows a narrow pale margin, (while in the former specimen (*badius*) the feathers are blackish in the middle

and broadly margined pale); the breast is unspotted and the vent distinctly barred with dark brown. The cheek including the lores, superciliaries and a stripe somewhat extending behind the eye on the neck are spotted with crimson; the bill is slightly more attenuated than in the other specimen, but the size of the two birds is almost exactly the same; wing $4\frac{2}{3}$ " ; tail $2\frac{1}{2}$ " ; bill at front nearly $\frac{7}{8}$ " ; from gape $1\frac{1}{4}$ " ; tarsus $\frac{3}{4}$ ". This second specimen perfectly agrees in the red colouring at the sides of the head with *brachyurus*, Vieill., and the only difference of Malherbe's figure consists in the uniform brown vent.

It is possible that, as I said, these two forms belong to distinct species; but large series must first be available for comparison. In general character of colouring and size they are so closely allied that it seems difficult to believe in a specific distinction of the two birds in spite of the few differences pointed out.

28. MEIGLYPTES TRISTIS, Horsfield.

Blyth, Cat. p. 60; *Phaiopicus tristis* apud Malherbe, Mon. Pic. II, p. 10.

A common species about Malacca, on Penang and in the Wellesley Province. A male specimen from the last named locality has the breast uniform blackish brown, which does not appear to be usually the case in this species; a female from the same locality has the pectoral streaks also less distinct than usually, but in other respects it is identical with typical specimens from the Southern islands. Raffles says that the transverse striæ on the head are in the female finer and more numerous, or almost obsolete. In all the Malayan specimens I saw, there is no perceptible difference to be noticed in the coloration of the two sexes, except that the ♀ wants the red mustachial streak of the male.

Total length about 6 inches; wing $1\frac{5}{8}$ "— $1\frac{6}{8}$ " ; tail $1\frac{3}{4}$ "— 2 " ; bill at front $\frac{1}{16}$ "— $\frac{2}{16}$ ", from gape $\frac{5}{8}$ " to nearly 1 " ; tarsus $\frac{1}{16}$ ". The bill often appears to be less strong in the ♀ than it is in the ♂.

29. MEIGLYPTES MARGINATUS, Reinw. (1821).

M. pectoralis, Latham, in Blyth' Cat. p. 60, N. 274.

Hemicircus brunneus, Eyton, Proc. Z. S. Lond., 1839, p. 106.

I only procured this species at Malacca where it appears to be com-

mon, and was described by Eyt on from that locality. Sclater (Proc. Zool. Soc. 1863, p. 210) quotes it from Borneo.

Male and female do not differ in colouring, except that the latter has no mustachial streaks. Total length about $7\frac{1}{2}$ " ; wing $4\frac{1}{8}$ " ; tail $2\frac{7}{8}$ " ; bill at front $\frac{6}{8}$ " to nearly $\frac{7}{8}$ " , from gape $1''$ — $1\frac{1}{8}$ " ; tarsus $\frac{1}{16}$ ". All the tail feathers are pointed, while in the preceding species the outer tail feathers are obtuse and the last ones rounded.

Blyth identified Eyt on's species with *P. pectoralis*, Latham. I do not know whether Blyth refers to any other of Latham's species than the one noticed in Suppl. Indicis Ornith., 1801, p. xxxii, App. to vol. VIII of Synops., and Add. p. 372, which is certainly quite a different bird, stated to inhabit Queen Charlotte's Sound. Latham says: "About 9 inches, head, neck and upper parts, deep cinnamon or chesnut — across the breast a large black crescent — tail black" &c. &c. Malherbe (Mon. Piciæ, II, p. 8) from whom we should have expected an explanation of the difficulty, does not solve it. He describes the Malayan species as *Phaiopicus pectoralis*, (Licht.), and gives as the first synonym *P. pectoralis*, Lath., but without further reference. Whether Latham described the present species as *P. pectoralis* prior to 1801, I have not been able to ascertain; I believe there is no other species of his under the same name; and presuming that Malherbe's identification of Reinwardt's *marginatus* is correct, I adopt the next oldest name for the Malayan species.

Fam. ALCEDINIDÆ.

30. CEYX TRIDACTYLA, Pall.

Jerdon, B. India, I, p. 229.

I have obtained only one specimen from the Wellesley Province, and the bird was pointed out by my collector as rare. I have myself barely seen a single specimen along the Malayan coast, though it may be common in some other districts of the Malayan Peninsula. Sharpe calls it the "Penang king-fisher." One would have, I believe, some difficulty in procuring a specimen in Penang. In addition to Jerdon's description, it should be stated that a patch in front of the eye, and the greater part of the eye-brows are

also black,* the sides of the chest are bright rufous. The measurements perfectly agree with those given by J e r d o n.

31. HALCYON COROMANDELICUS, S c o p.

J e r d o n B. India, I, p. 227.

B l y t h (Ibis, 1866, II, p. 348) says that this species extends from India to Japan, "but the Japanese race is said to be rather smaller and more deeply coloured." My collector shot one specimen in the Wellesley Province, and this is remarkably smaller than the Indian bird, even allowing something for immaturity. The lilac gloss above is very slight, the band on the upper back and rump is very narrow, pale bright blue, some of the lateral and terminal feathers partially or wholly bright violet blue; chin whitish rufescent, the rest below rufous, deepest on the chest, and all the feathers tipped dark brown, this color gradually disappearing towards the vent; front edge of wings fulvous; wing only 4 inches; tail barely $2\frac{5}{8}$ " ; bill at front 2", from gape $2\frac{1}{2}$ " ; tarsus $\frac{9}{16}$ ".

The bird is evidently a smaller Malayan race, like so many others, but it is not on that account specifically distinct from the Indian.

32. HALCYON ATRICAPILLUS, G m e l.

J e r d o n, B. Ind. I, p. 226; G o u l d, B. Asia, pt. XII.

This species does not appear to be common in the Malay Peninsula. One specimen has the feathers on the sides of the breast dark shafted, and those on the lower breast checkered with dark. The rusty color on the sides and on the vent is very pale; wing only $5\frac{1}{8}$ inches; tail $3\frac{1}{2}$ " ; bill at front $2\frac{1}{4}$ " , from gape $2\frac{3}{4}$ ".

33. HALCYON FUSCUS, B o d d.

J e r d o n, B. Ind. I, p. 224; G o u l d, B. Asia, pt. XIII.

One specimen, shot at Malacca, has only the chin pure white, most of the other white feathers down the throat and the breast are tipped with bluish and some also with brown; the albescent coloring is confined to the middle of the breast, and is not so largely developed as usually seen in Bengal and other speci-

* S h a r p e, (Proc.) Z. S. L. 1868, p. 591, says "Spot in front of the eye &c. pale orange." This must occasionally become obsolete, for it does not exist in several Malayan specimens.

mens. This would seem to indicate a passage to the Manilla form, *H. gularis*, K u h l, but the specimen has not the distinctive character of that species; the blue color above is beautifully developed, which seems to shew that the Malacca specimen is not a young bird: wing $4\frac{1}{2}$ inches; tail barely 3"; bill at front only $1\frac{3}{16}$ ", from gape $2\frac{5}{16}$ ", its height at base $\frac{5}{8}$ ".

34. *ALCEDO BENGALENSIS*, G m e l.

J e r d o n, B. Ind. I, p. 230; G o u l d, B. Asia pt. XIV.

A large specimen shot in the Wellesley Province has the pale blue tips to the feathers on the front head slightly, and on the scapulars scarcely at all developed, the chesnut below is pale; wing $2\frac{13}{16}$ inch, bill at front $1\frac{1}{2}$ ", from gape a little more than $1\frac{3}{4}$ ". Other specimens from the same locality, and from Malacca and Penang, are typical in coloration, some larger, others smaller.

35. *DACELO PULCHELLA*, H o r s f.

Resear. in Java, with fig. of ♂.

This appears to be a rare species in Malacca; one specimen obtained somewhat differs from the Javanese bird described by H o r s f i e l d.

Forehead and sides of head and neck, extending from the base of the lower mandible backwards, rich chesnut, this color partially tinging a few of the upper feathers on the posterior neck, but not joining to a complete collar, though the chesnut is laterally very distinct; crown and occiput extending posteriorly covered with a large beautifully azure blue patch, this reaching well to the sides of the neck; it is produced by the blue tips of the feathers, the basal two-thirds of their length being black on the front crown, the next posterior feathers have one white bar, and the last which gradually increase in length 2 to 3 white cross bars. The feathers on the back and scapulars extending down to the upper tail coverts are all broadly tipped with greenish blue, the rest of the upper plumage being black with white cross bars. Wings black, shoulder edge of wing and the external edge of the first primary pale rusty, primaries and the first secondaries with their coverts black, the former white at the base of the inner webs, the last secondaries with white spots on the outer web; the tertiaries

on both webs, their coverts being also spotted, and partially tipped with blue. Tail long, black, the inner webs of the feathers with transverse white spots, the outer ones with blue spots, this color diminishing on the outer tail feathers and becoming mixed with white, but on the outermost tail feathers it is replaced by rusty. Chin and throat pure white, breast and vent with their sides and including the lower wing coverts and the lower tail-coverts pale rusty. The fourth quill is the longest, and the first about half the length of the fourth; bill coral red, conical, almost uniformly and rather flatly arched above, upper mandible laterally somewhat projecting at the base, slightly curved at the tip; outer toe slightly shorter than the middle one, and the inner only $\frac{2}{3}$ of the length of the latter; wing $3\frac{1}{2}$ inches; tail $2\frac{1}{2}$ "; bill at front $1\frac{3}{8}$ ", from gape very nearly 2".

Mr. Blyth (Cat. Asiat. Soc. Museum, p. 46, No. 198) already records this species from Malacca; it also occurs in the Wellesley Province and extends into Tenasserim. In one ♂ from the last locality the brown collar nearly joins posteriorly, as in the Java bird, in two others from Tenasserim the brown is almost entirely separated above; but in no specimen have I seen it so strongly developed on the upper neck, as shewn in Horsfield's figure.

The female does not apparently differ in size; it is dark or blackish brown above, barred across throughout with rufous brown; below white with blackish cross bars on the lower breast, these bars being mostly developed at the sides of it and gradually disappearing towards the vent; lower tail coverts white.

Horsfield placed this species in the genus *Dacelo*, principally on account of the peculiar coloration of the bird; the bill is shorter and more regularly depressly conical, but barely more hooked at the tip than in most typical species of *Halcyon*, from which it can hardly be generically separated.

Fam. NECTARINIDÆ.

36. *ÆTHOPYGA LATHAMI*, Jardine.

1842, Nat. library, XIII, pp. 233 and 268, (an *Æ. siparaja*, Raffles seu *Æ. mysticalis*, Temm.)

Forehead extending posteriorly to the region crossed by a line between the middle of the eyes metallic purplish blue; occiput, sides of head, neck and its sides, back, scapulars, deep crimson, wings with their coverts dull greenish brown, the feathers with the exception of the two first primaries edged with green on the outer web, shorter coverts broadly tipped with red, longer coverts of the primaries and secondaries edged green and tinged with red; coverts of primaries uniform brown, edged green, shoulder edge of wing red; rump bright yellow; margined by elongated olive coloured feathers at the sides; upper tail coverts, the two central tail feathers wholly, and the next on the outer webs purplish steel-blue, this color decreasing towards the outermost tail feathers which gradually pass into shining black and are very indistinctly barred with dull black.

Loreal region dull black; a short streak from the base of the lower mandible bright red, bounded below, or internally, by a long streak of purplish steel blue, followed by dull black, both stripes extending to the middle of the neck. Chin, throat and breast bright scarlet, slightly darker on the breast, all the feathers white at their bases and with yellow shafts about the middle; lower part of breast, vent and lower tail coverts dusky greenish or ashy black; wings internally dark ashy with a silvery lustre, tail below black.

I have obtained (in Sept.) three male specimens in the forests of the Wellesley Province, opposite Penang; all perfectly similar in coloration; wing $2''$, tail $1\frac{3}{4}''$ — $1\frac{7}{8}''$, the central feathers being only about $\frac{3}{16}''$ longer than the next; bill black above, light brown below, at front $\frac{9}{16}''$, from gape very nearly $\frac{1}{16}''$; feet brown, tarsus nearly $\frac{1}{2}''$; middle toe (including claw) $\frac{7}{16}''$.

The coloration of this species agrees almost in every particular with J a r d i n e ' s description, and so do also the measurements. I don't think there can be the least doubt as to the identity of the two. J a r d i n e ' s original specimen was believed to have come from India, but its proper locality was unknown. Visc. W a l d e n (Ibis, Jan. 1870, p. 34) places J a r d i n e ' s bird as doubtfully identical with R a f f l e s ' s *siparaja* and T e m m i n c k ' s *mysticalis*. My impression is, that they are quite distinct birds. R a f f l e s says of *siparaja* that the two central tail feathers are brown, which does not

even apply to *mysticalis*, though it seems very probable that the two species are identical. Temminck's original figure of *mysticalis* in the Pl. Col. is not good. Müller and Schlegel (Verhand, Nat. Gesch. Nederl. Ind., *Nectariniæ*, p. 55) re-describe the ♂ of *mysticalis*, and from their account it is clear that this species and *Lathami* are closely allied. The authors describe the vent as ashy grey with greenish tinge, while Temminck's figure shews it almost white. The inner webs of the outer tail feathers are said to be reddish black, but in *Lathami* there is no red tinge on them. In a note the authors state that the rump is yellow, not blue as shewn in Temminck's figure, but I suspect the yellow must be of very small extent, as its presence escaped not only Temminck's, but apparently also Raffles' notice. Turning at last to the measurements given by Müller and Schlegel, Temminck's *mysticalis* is undoubtedly a much larger bird, its total length being 5 inches, while that of *Lathami* does not exceed $4\frac{1}{4}$ ". The tail of *mysticalis* is 17 mm. longer than the wing which is about 2 inches; while in *Lathami*, the tail is shorter than the wing, and the central feathers much less elongated, all the tail feathers being regularly graduated. The central tail feathers in *Lathami* are only about 3 mm. longer than the next, and these again from 10-15 mm. longer than the shortest feathers; in *mysticalis* Müller and Schlegel give the corresponding proportions as 28 mm. and 11 mm. The black internal margin of the mustachial streak also appears characteristic of *Lathami*, and is not mentioned in *mysticalis*. I have little doubt that Cabanis' *Æ. eupogon* from Malacca is the same bird as *Lathami*, but original specimens must be compared in order to settle this question satisfactorily.

37. NECTAROPHILA BRASILIANA, G m.

Walden in Proc. Z. S. L., 1866, p. 543 and Ibis, 1870, VI, p. 41.—*Nectarinia Hasseltii*, Temm. Blyth Cat. p. 226.

Wing $1\frac{7}{8}$ ", rarely 2"; tail $1\frac{3}{16}$ ", rarely $1\frac{1}{4}$ "; bill at front $\frac{1}{2}$ " or very little longer; tarsus very nearly or quite $\frac{1}{2}$ ".

Blyth (l. cit.) quotes his *N. Phayrei*, (J. A. Soc. XII, non XI, p. 1008), as a synonym of this species. Jerdon says (B. Ind. I, p. 361), *A. Phayrei*, Bl., from Pegu, very close to *Arachn. magna*. What does this last quotation refer to?

My collector obtained in the Wellesley Province and on Penang 4 males, but strangely not a single ♀ which appears to be rare, or difficult to procure, and was unknown to Temminck. Müller and Schlegel in their *Bijdragen der Honigvogels v. d. ind. Archip.* p. 59, pl. 10, fig. 5 (*Verh. over Nat. Gesch. &c., door C. J. Temminck, Zoolog.* 1839-1844) figure and describe the ♀ of this species as being above brownish black, sides of neck and head and of the breast, front and top of head, posterior rump and upper tail coverts, chin and throat mostly red, lower breast and vent whitish. The same authors state that the young bird resembles the ♀ during the first year.

38. *ARACHNECHTHRA FLAMMAXILLARIS*, Blyth.

J. Asiat. Soc. Beng. XIV, p. 557; *Cat.* p. 226; Walden in *Proc. Z. S. L.* 1866, p. 541 and *Ibis* 1870, VI, p. 24.

I obtained only one ♂ specimen from the Wellesley Province. The feathers on chin and throat have a purple metallic lustre, at the sides slightly, but in front of the reddish brown pectoral semicircle, distinctly greenish metallic. Laterally the feathers are also somewhat mixed with dingy green. In other respects, the specimen is identical with the Arracan and Burmese form; wing 2"; tail $1\frac{3}{8}$ "; bill at front $\frac{1}{8}$ "; tarsus $\frac{9}{16}$.

Visc. Walden's remarks (l. cit. p. 542) respecting the possible identity of this species with *A. jugularis* of Linné will, I believe, soon call for a revision of the nomenclature. Both species certainly are very closely allied, if not identical.

39. *NECTAROPHILA* [*ANTHREPTES*] *MALACCENSIS*, Scop.

Walden, *Ibis*, 1870, VI, p. 47, cum synonym.—*Nectarinia lepida*, Lath. (*Synop.* I, 298) et auctorum.—*N. malaccensis* apud Blyth *Cat.* p. 225.

This species appears to be common in the Wellesley Province; ♂ wing $2\frac{1}{2}$ "— $2\frac{9}{16}$ "; tail $1\frac{3}{4}$ "; bill at front $\frac{5}{8}$ ", from gape $\frac{6}{8}$ ", or a little more; tarsus $\frac{5}{8}$ ";—♀, wing $2\frac{7}{16}$ "; tail $1\frac{5}{8}$ "; bill at front $\frac{9}{16}$ ", from gape very nearly $\frac{3}{4}$ "; tarsus $\frac{5}{8}$ ".

Horsfield's *N. javanica* (Linn. *Trans.* XIII, p. 167) is usually considered to be the same bird, and as the identification of the Javanese bird has, I think, first been suggested

by Müller and Schlegel, it is probably correct, though Horsfield's description does not speak in favour of it. He calls the chin and throat ferruginous, while Latham's expression "*rubro-fusca*" is the more correct. Horsfield's "lower coverts of the wings are rufous" is doubtful, for in the Malayan bird, the longer scapulars and the shortest coverts are terminally rufous brown, the longer coverts of the secondaries and tertiaries are edged on the outer webs partially brown, partially greenish. Further on, Horsfield says "tail is black with a greenish lustre above, fulliginous and paler underneath." In *Malaccensis* we have the tail above black, the two central tail feathers edged with purplish green on both webs, the following only on the outer web and the last feathers uniform dull black, all ashy black below. The sides of the head and neck are dingy green in the Malayan bird. However all these variations do not appear to be of great importance, for they would hardly indicate more than local races of the same species.

The female is above dingy green, wings and tail dusky brown, more or less edged with green, below yellow, brightest and purest on the middle breast, somewhat tinged with green on the throat, the two mustachial streaks are indicated by pure yellow, eyelid especially the lower one, distinctly yellow.

Fam. ARACHNOTHERIDÆ.

40. ARACHNOTHERA MODESTA, Eyt on.

Anthreptes modesta, Eyt on, Proc. Z. S. Lond., 1839, p. 105.—*Arach. modesta et latirostris*, Blyth, Jour. A. S. B., vol. XII, p. 981-982.

Above uniform yellowish green, duller on the wings and tail, the feathers on the forehead centered dark; the first two quills almost wholly brownish black, the others only on the inner webs, the last tertiaries wholly green; shoulder edge of wing yellow; tail feathers with a brownish black, almost terminal band, and the outer feathers mostly of the same color on the inner webs, the three outer feathers on each side with a subterminal large white spot on the inner webs. Below, greenish ashy, the feathers on the chin, throat and breast very distinctly centred dark; lower tail coverts yellowish

green with yellowish white tips; lateral feathers of the vent greatly lengthened. Wing $2\frac{7}{8}$ " ; tail $1\frac{3}{4}$ " ; bill at front $1\frac{3}{16}$ " ; from gape $1\frac{3}{8}$ " ; tarsus $\frac{5}{8}$ ".

This species is readily distinguished from the last by its stout and short bill; it is rare about Malacca and in the Wellesley Province, and I only once saw it at Penang.

Fam. DICÆIDÆ.

42. DICÆUM TRIGONOSTIGMA, Scop.

Bl y t h, Cat. p. 226 ; L a t h a m, In. Ornith., I, p. 299.

♂. Dark, sometimes greyish, blue above and on the sides of the head and neck, as well as on the scapulars and wing coverts of which the anterior are edged with green; wings black, the feathers edged with greenish blue on the outer webs, shoulder edge of wing white; back bright golden orange, rump greenish yellow, longer upper tail coverts green, tail black, like the wings, with a faint greenish lustre; chin and throat cinerous white, breast and vent bright orange yellow, becoming pure yellow on the lower tail coverts; wing $1\frac{7}{8}$ " ; tail $\frac{7}{8}$ " ; bill at front $\frac{3}{8}$ " ; from gape $\frac{1}{2}$ " ; tarsus $\frac{1}{2}$ ".

♀. Above dark greenish, wings and tail blackish, rump and upper tail coverts yellow, chin and throat greenish grey, rest of lower parts orange yellow; size same as that of the male.

Apparently not common in the Wellesley Province and about Malacca.

43. DICÆUM CHRYSORHÆUM, Temm.

Pl. Col. 478 ; J e r d o n, B. Ind. I, p. 374.

Specimens from the Wellesley Province are all a little larger than the measurements given by J e r d o n from Indian specimens, and there is no distinct yellow tinge on the rump and upper tail coverts; wing $2\frac{3}{8}$ " ; tail $1\frac{3}{16}$ " ; bill at front $\frac{3}{8}$ " ; from gape $\frac{1}{2}$ " ; tarsus $\frac{1}{2}$ ". The Malay specimens agree best with T e m m i n c k's figure of a Javanese bird, which has the throat whitish and the rest of the plumage below with a very slight greenish tinge.

44. DICÆUM CRUENTATUM, Linn.

D. coccineum, Scop., G o u l d, B. Asia, pt. VI; J e r d o n, B. Ind. I, p. 373.

The Malayan bird, though identical in coloration with the Indian one, seems to be smaller, at least of four specimens shot in the Wellesley Province, opposite Penang, three have the wing scarcely longer than $1\frac{3}{4}$ inch, and only one has it $1\frac{7}{8}$, but none reaches 2 inches, the tail is nearly one inch, and the bill at front is $\frac{3}{8}$ "; the wing coverts and scapulars have a rather bluish green lustre, and the scarlet above is either very bright and almost pure or with a slight yellowish tinge. *Vise. Walden* (Proc. Zool. Soc. Lond., 1866, p. 544) draws attention to these differences, but I hardly think that they are sufficient to warrant a specific distinction. Should this, however, be the case the name *coccineum*, *Scop.*, would stand for the Eastern, Malayan and Chinese form, for the type of this is said to have been obtained from China, and the Indian race had to be called *cruentatum*. I believe, however, that smaller races, similar to the Malayan ones, also occur locally in India and Burma, and that there is no sufficient ground for a specific separation.

Fam. MEROPIDÆ.

45. *MEROPS PHILIPPINUS*, *Lin n.*

G o u l d, B. Asia, pt. VII; *J e r d o n* B. India, I, p. 207.

Specimens from the Wellesley Province are perfectly identical in size and coloration with those from India. The last tertiaries are almost wholly dull greenish blue, not only on the outer edge, as shewn in *G o u l d*'s figure.

Fam. MOTACILLIDÆ.

46. *HENICURUS CHINENSIS*, *G o u l d.*

Birds of Asia, pt. XVIII.

I obtained only one specimen from the Wellesley Province; it quite agrees with the figures and measurements recorded of the species.

47. *HENICURUS RUFICAPILLUS*, *T e m m.*

Planches Col. 534.

A specimen from the Wellesley Province almost perfectly agrees with *T e m m i n c k*'s figure, except that there is a little less black on the top of head separating the frontal white from the rufous brown of the crown and of the neck. The lateral black stripes

become obsolete on the posterior vent. Wing $3\frac{3}{8}$ " ; tail about $3\frac{1}{2}$ " ; bill at front $\frac{3}{4}$ " , strongly hooked at the tip, from gape $1\frac{1}{8}$ " ; tarsus $1\frac{1}{6}$ " ; bill black, feet white.

The species is recorded from Java and Sumatra, and seems to be very rare in the Malay Peninsula ; it is not known to extend farther northwards.

48. EUPETES MACROCERCUS, T e m m.

B l y t h, Cat. p. 158.

Wing 4" ; tail 5" ; bill at front nearly 1" , from gape $1\frac{7}{16}$ " ; tarsus $1\frac{3}{4}$ " ;—not common in the Wellesley Province.

S t r i c k l a n d (Ann. and Mag. N. H., XIX, 1847, p. 132) suggests to class this remarkable bird in the TIMALINÆ, but considering the general structure of this and allied species, they undoubtedly exhibit a greater relation to *Hydrobata* and *Henicurus*, then to any *Timalia* ; unfortunately I could not obtain any information about the habits of the present species ; the coloration exactly agrees with T e m m i n c k ' s figure.

Fam. PITTIDÆ.

49. PITTA GRANATINA, T e m m.

Planches Col. 506.—*P. coccinea*, E y t o n, Proc. Zool. Soc. Lond., 1839, p. 104,

An apparently young bird from the Wellesley Province has the front sides of head sooty brown, head above and occiput crimson, posterior neck blackish brown, rest of upper plumage uniform deep blue, quills with their coverts and the inner webs of the other wing feathers brownish black, chin and throat of the same colour, breast and vent brown, on the former most of the feathers are blue and tipped with reddish, the red increasing towards the vent but not predominating, except at the sides ; under tail coverts red ; wing $3\frac{1}{2}$ " ; tail $1\frac{1}{4}$ " ; bill at front $\frac{1}{6}$ " ; from gape 1" ; tarsus $1\frac{1}{2}$ ". The specimen wants the bright lilac color at the sides of the head and on the wings, which is to all appearance a sign of maturity. Malacca specimens in full plumage appear perfectly to agree with T e m m i n c k ' s *granatina* with which B l y t h (Cat. p. 157) first identified them, but subsequently he stated (p. 326) that the name *granatina* has been restricted to the Borneo bird, and that the

Malayan one is identical with *venusta*, Müll. This last, as figured by Temminck (Pl. Col. 590) and re-described by Müller and Schlegel (Oversigt. Ind. Arch. *Pitta*, p. 15) seems to me, however, to be quite a different bird.

Fam. *TURDIDÆ*.

50. *GEOCICHLA MODESTA*, Eyton.

Turdus modestus, Eyton, Proc. Z. S. London, 1839, p. 103.

♂. Olivaceous brown above, a little darker on the head, lores and ear-coverts dusky, a narrow streak below the lower mandible, widening posteriorly, and the whole of the posterior throat cinereous; superciliary stripe, lower eyelid, mustachial stripe, chin and anterior throat pure white; front of breast including the sides and extending down to the vent pale ferruginous; median portion of lower breast, vent, and lower tail coverts pure white; wing 5"; tail $3\frac{1}{2}$ "; bill at front $\frac{5}{8}$ ", from gape $1\frac{1}{16}$ "; tarsus $1\frac{3}{16}$ ".

The female differs by having the cinereous color less pure and much less developed on the posterior throat, the ferruginous of the breast is also more mixed with ashy; the size is the same as that of the male.

Specimens from the Wellesley Province perfectly agree with those from Malacca as well as with those from Arracan. The species has been by different authors identified with Horsfield's *T. javanicus*, but on comparing the description of this, as well as that of *Drapiez rufulus*, the Javanese bird appears to me to be distinct, though I have no authentic specimens to compare. I do not know Temminck's *T. concolor*, but until the uncertainty about the correct definition of the allied insular species has been satisfactorily settled, Eyton's name should be reserved for the Malayan bird.

G. modesta also occurs at the Andamans and along the Arracan coast, and may probably extend into Cachar and farther north into Assam.

Fam. *TIMALIIDÆ*.

51. *TURDINUS MACRODACTYLUS*, Strickland.

Vide Strickland in Ann. and Mag. N. H., 1847, XIX, p. 133, and Blyth in J. A. S. B., XIII, p. 382.

Blyth separated this species as the type of *Turdinus* from Eytton's *Malacopteron*. The bill as well as the gradation of the wing feathers, and in fact the entire habitus of the bird are quite distinct from the type of the last named genus. Blyth's description and measurements apply to the Malaccan bird, but a smaller form occurs farther north in the Wellesley Province. The plumage is in every respect the same, the back in one of the specimens slightly more rufous brown, and the chin in both pure white, extending a little more on the sides of the head, than it does in Malaccan specimens, but apparently not so much low down, barely reaching beyond the middle of the throat. The bill also appears to be a little higher, gradually tapering, and less notched at the tip, than in a specimen from Malacca, but such slight variations no doubt are individual, or differ according to age.

I append the comparative measurements of the two races.

	Spec. from Malacca.	2 Specimens for Wellesley Province.
Wing,.....	$3\frac{5}{8}''$,	$3\frac{3}{16}''$ — $3\frac{1}{4}''$.
Tail,	$2\frac{1}{2}''$,	$2\frac{3}{8}''$.
Bill at front,	$\frac{3}{4}''$,	$\frac{3}{4}''$.
„ from gape,	$1\frac{1}{16}''$,	$1''$.
Height of bill at front, ...	$\frac{1}{4}''$,	$\frac{9}{32}''$.
Tarsus,	$1\frac{1}{4}''$,	$1\frac{3}{16}''$.

Blyth described (Jour. Asiat. Soc. 1855, XXII,) three other species of *Turdinus* from the Tenasserim Provinces; they all somewhat differ in plumage from the Southern Malayan form; lately (Ibis, April, 1870), the same author also notes several species of that genus from Java, having inspected some specimens in the Leyden Museum, &c.

52. TURDIROSTRIS SUPERCILIARIS, H a y.

Madras Jour. 1845, XIII, pt. II, p. 163.

From Malacca and the Wellesley Province.

The male has the whole of the dark plumage tinged with bluish ashy; the female is dull brownish black with a plain ashy tinge. A full grown male measures wing 4"; tail $3\frac{7}{8}''$; bill at front $\frac{13}{16}''$; from gape $1\frac{1}{8}''$; tarsus $1\frac{1}{16}''$. As compared with *Turdinus*, the bill of *Turdirostris* is stronger, more concave at the sides and broad-

er at the base, provided with strong bristles and stiff feathers, those of the loreal region almost entirely covering the nostrils, while the same are uncovered, or nearly so, in *Turdinus*. The wings and tail are comparatively longer, the primaries being narrower and longer, but the tertiaries shorter, than in *Turdinus*. On the whole this last named genus appears to possess more of a Turdine while *Turdirostris* has more of a Timaline aspect.

53. *MIXORNIS NIGRICOLLIS*, T e m m.

Planches Col. pl. 594, fig. 2 ; *T. erythronotus*, Blyth, J. A. S. B., XI, p. 793 ; *Brachypteryx nigrogularis*, Eyt on, Ann. and Mag. N. H., 1845, XVI, p. 228.

If the generic distinction between *Mixornis* and *Timalia* is to be retained the present species, should be placed in the former genus, on account of its comparatively very strong bill and the very short rictal bristles, the reverse being the case in *Timalia*, which besides has the 5th and 7th primaries equal, while *Mixornis* has the 7th sensibly shorter than the two preceding.

Blyth's description of the bird is excellent ; ♂ and ♀ are quite similar. Wing $2\frac{3}{4}$ " ; tail $2\frac{1}{4}$ " ; bill at front $\frac{5}{8}$ " ; from gape $\frac{1}{1}\frac{3}{8}$ " ; tarsus $\frac{1}{1}\frac{5}{8}$ ". The species is very common in Penang and the Wellesley Province.

54. *DRYMOCATAPHUS NIGROCAPITATUS*, E y t o n.

Brachypteryx nigrocapitata, E y t o n, Proc. Zool. S. Lond. 1839, p. 103.

Blyth in Catalogue, p. 178, quoted this species first as a doubtful *Brachypteryx*, and then, in Appendix 3, as *Drymocataphus*, which genus he proposed for the species in Vol. XVIII, Journ. Asiat. S., 1849, p. 815. Its distinction from *Brachypteryx* is indeed very marked, not only the bill being different, but the tail much longer, and the primaries shew totally different proportions. The habitus of the bird is that of a *Pomatorhinus* and of *Pelorneum*, differing from the former by the hooked and notched bill, and from both by the proportions of the primaries. In 1849 (l. cit.) when proposing the genus, Mr. Blyth simply quotes Eyt on's species as the type, and describes another species, *D. fuscocapillus* from Ceylon, which he says is allied to the former. Since then (Ibis

1867, III, p. 301) Blyth referred the Ceylon species to *Pellorneum*, but does not say anything about the genus *Drymocataphus*, of which the Malayan species is the type. As the species is not common, a brief description of the genus and of the type species may be acceptable to Indian Ornithologists.

Drymocataphus, Blyth, 1849. Bill lengthened, gradually becoming thinner laterally, and on the upper terminal half slightly arched, moderately curved and hooked at tip; nostrils elongated, free; a few short rictal bristles; wings very short, first quill smallest, second about half as long again, 3—7th graduated, the 7th being longest, the eighth and ninth very little shorter and equal; secondaries elongated, tertiaries conspicuously shorter; tail long, rounded, the middle feathers being the longest; feet strong with a long tarsus, inner and outer toe subequal, the middle one lengthened, hind toe shorter, but stronger, and with a very long curved claw, being double the length of that of the middle toe.

D. nigrocapitatus, Eyton. Head above and occiput black, rest of upper plumage rufous brown, lores and supraciliary stripe and lower eyelids whitish ashy, the feathers having pure white quills; ear coverts rufescent ashy; a moderate blackish brown mustachial streak from lower mandible bordering laterally the white chin and anterior throat; lower throat and breast bright rufescent, changing to deeper brown on the vent and the lower coverts. Bill black above, yellowish white below; legs brown. Wing $2\frac{3}{4}$ " ; tail $2\frac{3}{8}$ " ; bill at front $\frac{5}{8}$ " , from gape $\frac{7}{8}$ " , tarsus $1\frac{1}{4}$ " , middle toe including claw $\frac{7}{8}$ " ; hind toe, including claw $\frac{1}{16}$ " , claw alone $\frac{5}{16}$ " . I did not observe the species farther North than Malacca.

Fam. MELLIPHAGIDÆ.

55. IORA LAFRESNAYEI, Hartlaub.

Rev. Zool. 1844, p. 401.

I obtained a single full grown male of this species from the Wellesley Province. The one originally described by Hartlaub was from Malacca, and appears to be a female. Mr. Blyth described another specimen from Arracan, also a female, under the name of *I. innotata*, (vide J. A. S. B., XVI, p. 472). The species seems to be very rare.

♂. General plumage above black with a greenish glossy tinge, forehead yellow, passing to black on top of head between the eyes, neck and back tinged with yellowish green, feathers of the rump very soft, much lengthened, whitish at their bases, olivaceous towards the middle and with yellow tips; upper tail-coverts short, metallic black, tail and wings shining black, the latter internally near the shoulder edge yellow, then white, all the wing feathers having the bases with their coverts and the edges of the inner webs white; the 5-9th quills are on the basal half of the outer webs also slightly edged with yellow; lores and eyelids yellow, ear-coverts black; below uniform bright yellow throughout, slightly olivaceous at the side of the breast below the wings; wing $2\frac{3}{4}$ " ; tail $2\frac{5}{16}$ " ; bill at front $\frac{1}{16}$ ", from gape $\frac{1}{8}$ " ; tarsus $\frac{1}{8}$ ".

Blyth gives the measurements of the female as: wing $2\frac{3}{4}$ " , tail $2\frac{1}{4}$ " , bill from gape 1" , tarsus $\frac{3}{4}$ " ; it is uniform green above, yellow below with no white on the wings except a slight edge to the primaries.

Although the beak of this species is comparatively of a very large size, its form is exactly that of other typical *Iora*, and the same applies to the peculiar yellow and black, or yellow and greenish coloration of the sexes. When viewed externally, the black tinge of *Lafresnayeri* strongly recalls the coloration of *Zeylonica*.

56. IORA TYPHIA, Linn.

Jerdon, Birds of India, II, p. 103.

Blyth (J. A. S. B., XIII, p. 380), I think, first suggested the identity of *I. typhia*, L. and *I. Zeylonica*, Gmel., and Mr. Hume, lately (J. A. S. B., XXXIX, Part II, p. 117) says that there can be hardly a doubt as to the identity of the two. I do not think that the difference of size, relied upon by Dr. Jerdon, holds good; he must have had taken the measurements of an unusually large specimen of *typhia* with the wing $2\frac{5}{8}$ " , for several which I measured, have the wing only $2\frac{1}{2}$ " , and some barely as long, but the bill of *typhia* always appears to be a trifle longer than that of *Zeylonica*. It certainly appears very probable that the two forms only represent different phases of plumage, or races of one and the same species, but it is at the same time remarkable to find that ♂ *typhia*,

in fully developed plumage, never has the whole head black, at least I never saw, nor heard of, such specimens; but of course if the two extreme, as well as intermediate, forms do occur in one and the same locality and interbreed, there is every reason to believe that they only form one species. However, I do not think that even in this case it could be disputed that the two phases of plumage,—pointed out as characteristic of *typhia* and *Zeylonica*,—do not occur constant in mature birds. *Zeylonica* is the strictly Indian form, *typhia* is the Malayan, and birds with the whole upper black plumage of *Zeylonica* are never met with in Burma and the Malayan country. A couple of female specimens of *Zeylonica* which I compared had the green upper, and yellow lower, plumage slightly paler than specimens of *typhia*, and the tail feathers were less truncate, more obtusely rounded with yellowish subterminal cross bands and the general plumage of the tail feathers was a little brownish, but I cannot say whether these characters are in any way constant among a large series of birds; I do not expect they are. The female of *typhia* is almost exactly like that of *scapularis*.

Visc. Walden (Proc. Z. S. London, 1866, p. 550) questions Blyth's statements as to the occurrence of both *typhia* and *scapularis* in the Malayan Peninsula, and observes that he possesses a female specimen of an *Iora* from Malacca with the bill longer and slenderer than that of a Tenasserim specimen, but the wing much shorter. Walden suspects it to be *scapularis*, which identification may be correct, considering that the usual size of ♂ *I. typhia* is at the wing $2\frac{1}{2}$ " , and the ♀ is often a little smaller than the ♂, consequently the measurements between the two species are not so contrasting, as they were believed to be. It is, however, also possible that the ♀ specimen in question belongs to a small variety of *typhia*, of which I obtained a pair in full plumage from the Wellesley Province.

The coloration of a ♂ specimen from the same locality, indicates one of the intermediate forms between *Zeylonica* and *typhia*, and is almost exactly like that of *Lafresnayi*. It is green above, on the occiput and neck strongly tinged with black; wings and tail black, the former with the usual large white tips to the shorter, and the narrower greenish white tips to the longer coverts; sides of head including eyebrows, lores, and the whole of the lower plumage bright yellow,

brightest, almost saffron yellow, on the throat and paling towards the vent. The bill is exactly as large and slender as in Burmese or Calcutta specimens, but the wing shorter, being $2\frac{3}{8}$ " tail $1\frac{7}{8}$ ", bill at front $\frac{9}{16}$ ", from gape nearly $\frac{3}{4}$; tarsus, $\frac{3}{4}$ " (the same as in *typhia* and *Zeylonica*).

♀. Olivaceous green above, blackish brown on the wings, yellow below, the tips to the shorter wing coverts white, those of the larger coverts mostly green, and the shoulder edge greenish yellow, tail feathers green, the outer ones partially dusky brown on the inner webs and with greenish yellow edges, all conspicuously cross-barred with dusky brown; wing $2\frac{5}{8}$ "; tail 2", the other measurements the same as in ♂. In spite of its slightly smaller size, I am confident that the Malayan bird is the same which occurs in Tenasserim and in Bengal, and probably similar variations of size, as those just noted, will be sooner or later recorded also from Indian localities.

As regards the alleged identity of *typhia* and *Zeylonica*, we must now await the result of Mr. Hume's comparison of the numerous specimens of both forms which he states that he has at his disposal from almost all parts of India.

57. IORA SCAPULARIS, Horsf.

♂. Uniform dark green, paling to yellowish on the rump, and passing to bright yellow on the vent and lower tail coverts; eyebrow above and a spot below the eye bright yellow, posterior and anterior angle of the eye, including the lores, dull black; wings with the scapulars, upper tail coverts and tail shining black; shoulder edge of wing yellow, or greenish yellow; shorter and longer coverts broadly tipped with white, wing feathers edged green externally, tail feathers sometimes very slightly tipped greenish; and in immature specimens the outer feathers are mostly green; tibial feathers yellow; tail very indistinctly cross-barred; bill leaden brown with pale whitish edges, legs leaden grey. Wing $2\frac{9}{16}$ ", tail 2", bill at front $\frac{9}{16}$ ", from gape very nearly $\frac{3}{4}$ "; tarsus $\frac{3}{4}$ ".

The female does not appear to differ from that of *I. typhia*, except that the tail seems less dusky on the inner webs and very

narrowly edged with greenish, above there are scarcely any cross bars perceptible; wing $2\frac{7}{16}$ " ; tail $2\frac{1}{8}$ ". The bill of *scapularis* appears in some specimens to be more straight than that of *typhia*, but there is no difference in its length. It seems pretty constant that the tail of the female *Iora* is proportionally longer and the wing shorter, than those of the males.

This species is not uncommon in Penang, the Wellesley Province, and farther south about Malacca. The female was described and figured by Horsfield in his "Researches" from Java.

58. PHYLLORNIS JAVENSIS, H o r s f.

G o u l d, Birds of Asia, pt. XIII.

This is a very common species about Malacca and in the Wellesley Province. All the males, that I have obtained, had the hinder angle of the eye yellowish, indicating the yellow eye-ring of the female. The old ♀ has the mustachial streak slightly blue and the shoulder tuft mostly green with only a slight trace of blue, sometimes with scarcely any; the young ♂ has the mustachial streak originally green, but it gradually changes to blue, and at the same time also some of the yellow feathers on the throat begin to turn black. Wing in ♂ $3\frac{7}{8}$ 4 inch; tail $2\frac{3}{4}$ "—3"; wing in ♀ usually $3\frac{3}{4}$ "; tail $2\frac{3}{4}$ "; bill in both about $\frac{1}{16}$ ", being a little more strongly curved at tip in the ♂, than in the ♀.

59. PHYLLORNIS CYANOPOGON, T e m m.

G o u l d, Birds of Asia, pt. XIII.

Five males were obtained in September by my collector in the Wellesley Province. All have the forehead and a gorget on the front breast bordering the black much more conspicuously yellow than shewn in G o u l d ' s figure; wing 3- $3\frac{1}{2}$ inch; tail about $2\frac{3}{8}$ "; bill at front $\frac{1}{2}$ ".

B l y t h (Ibis, 1867, III, p. 9,) suggests that for this and the preceding species, characterized by a small shoulder tuft and a bill of the shape of *Iora*, the name *Phyllornis* should be restricted, as distinct from J. and Selby's *Chloropsis* under which he would include the other chiefly smaller species with a very conspicuous blue shoulder tuft. This distinction does not seem to be very important,

and it would be very difficult to define genera upon such subordinate characters. In coloration the two last noted species of *Phyllornis* so thoroughly agree with their Indian allies, that it strikes one as very unnatural to separate them generically. The bill is in all species of *Phyllornis* which I saw more compressed and higher towards the tip, than in *Iora*, in which it is more uniformly attenuated towards the tip; and this difference is equally well apparent in a comparison of these two species, as of other typical forms, with *Iora*.

60. PHYLLORNIS COCHINCHINENSIS, L a t h.

Ph. icterocephalus, T e m m., Pl. Col. 112; B l y t h, Ibis, 1867, III, p. 8.

Common in Malacca and the Wellesley Province and Penang, though not equally so as *Ph. Javensis*.

Mr. B l y t h (l. cit.) suspects that in *Phyllornis* both sexes are similar, or very nearly so, in coloration. So they are, but I think the differences usually pointed out between ♂♂ and ♀♀ are mostly correct, though like in all similar birds there is great difficulty in distinguishing between ♀ and young birds. As an example I give a short description of a pair of the present species shot together on the coast just opposite Penang, and examined by myself.

♂. Head yellow, changing to golden yellow on top of head and neck; above deep grass green, all external wing coverts and outer webs of primaries, and secondaries bright blue, the latter tipped with greenish, which color extends on the edges of the outer webs, and gradually increases, till the last tertiaries become wholly green; inner webs of all feathers dark brown, gradually decreasing on to the last tertiaries; a large shoulder tuft verditer blue, scapulars and all upper coverts green; two central tail feathers mostly green, the others prevalent blue. Chin and throat black, laterally extending from the base of the bill to half the length of the eye, with a very small deep blue spot at the base of the lower mandible; the black is bordered below by yellow, to which follows a narrow gorget of bluish green, and the rest including lower tail-coverts is of a soft yellowish green. Bill black, legs leaden brown; wing $3\frac{1}{8}$ " , tail $2\frac{3}{8}$ " ; bill at front $\frac{9}{16}$ " , from gape $\frac{1}{16}$ " ; tarsus $\frac{5}{8}$ " .

♀. Above, grass green with a slight golden yellow tinge on the

head, especially on the top and at the sides of the middle neck, wings and tail equally bright and exactly similarly colored as in ♂, and the same is also the case with the breast, vent and under tail coverts; chin and throat uniform bluish green, with a blue elongated spot at the base of the lower mandible; bill and legs brown; the measurements are the same, as in the ♂, but the bill a little smaller and less stout.

Another pair shot near Malacca exactly agrees in colouring with the above.

Fam. BRACHYPODIDÆ.

61. CRINIGER GULARIS, Horsf.

Icos phæocephalus, Hartlaub and Pycnon. *rufocaudatus*, Eytton, vide Strickland in Ann. and Mag. N. H., 1847, XIX, p. 130.

Although several descriptions have been published of this bird, they are hardly sufficient to recognize the species. Head above blackish ashy, each feather being narrowly margined paler, rest of upper plumage olivaceous green, yellowish green on the rump, dusky brown on the inner webs of the wing feathers, rufescent greenish brown on the upper tail coverts and tail; lores whitish, sides of head ashy; chin and throat pure white; breast, vent and lower tail coverts bright yellow, sides of breast and vent olive green; lower wing coverts yellow; inner webs of wing feathers, especially near their bases, silky white; bill well curved, slightly hooked at tip, above dark leaden brown with white edges, below a little more whitish; 6 very strong black rictal bristles on each side, the most anterior the smallest, the two median ones almost reach to the tip of the bill when laid forward; narine bristles thin and small; wing $3\frac{1}{2}$ " ; tail $3\frac{1}{2}$ " ; bill at front $\frac{5}{8}$ " , from gape $\frac{7}{8}$ " ; tarsus very nearly $\frac{3}{4}$ " ; middle toe $\frac{5}{8}$ " ; hind toe $\frac{1}{2}$ " , the claw of the latter is very little stronger than that of the middle toe; the two outer toes are equal, and each as long as the hind toe. The bill is rather broad at the base, the rictal bristles comparatively very strong, the feet rather weak, shewing that the whole habitus of the bird is that of a *Criniger*, as pointed out by Strickland. With the exception of the characteristic shortness of the tarsi, the species

shews considerable affinities to *Turdirostris*, especially in the form of the bill and the length of the rictal bristles.

Rare at Malacca and in the Wellesley Province.

62. *MICROTARSUS MELANOLEUCOS*, E y t o n.

Proc. Zool. Soc. London, 1839, p. 102. *Brachypodius tristis*, Blyth, J. A. S. B., XIV, p. 576.

Apparently rather rare in Penang and in the Wellesley Province, occurring in dense forest; wing $1\frac{1}{4}$ " ; tail $2\frac{1}{2}$ " ; bill at front $\frac{1}{16}$ ", from gape $\frac{3}{4}$ " ; tarsus $\frac{9}{16}$ ".

63. *BRACHYPODIUS MELANOCEPHALUS*, G m e l.

T e m m i n c k, Pl. Col. 147. *Ixos metallicus*, E y t o n, Ann. and Mag. Nat. Hist., 1845, XVI, p. 228.

E y t o n's name evidently refers to the greenish or purplish metallic tinge of the whole head; the total length stated to be 8" must be a misprint, as Strickland suggested, for E y t o n's two other measurements agree exactly with those of this species. Wing 3"— $3\frac{1}{8}$ " ; tail $2\frac{1}{2}$ "— $2\frac{5}{8}$ " ; bill at front about $\frac{1}{2}$ " , from gape $\frac{3}{4}$ " ; tarsus $\frac{1}{2}$ ". Common in the Wellesley Province and on Penang. I have seen it darting after insects almost like a fly-catcher.

64. *IXIDIA CYANIVENTRIS*, Blyth.

Pycnonotus ? cyaniventris, Blyth, J. A. S. B., XI, p. 792; *idem* Cat., 211, cum syn.

The original measurements given by Blyth must have been taken from a rather large bird, for the specimens in the Asiatic Society's Museum are somewhat smaller. The species is common with the previous about Malacca, on Penang and in the Wellesley Province. Wing $2\frac{3}{4}$ "— $2\frac{7}{8}$ " ; tail $2\frac{1}{2}$ " ; bill at front very nearly $\frac{1}{2}$ " , from gape nearly $\frac{3}{4}$ " ; tarsus $\frac{9}{16}$ ".

These three last named species are so closely allied as regards their short stoutish form of the body, the subconical arched bill (being slightly hooked at the tip), the presence of few rictal and narine bristles, feeble feet with short tarsi, coloration, &c., that it would at the first sight appear unnatural to apply to them three distinct generic names. It is perhaps so, and a smaller sub-division would suffice; we may call them either genera or sub-genera, but

there certainly are noticeable distinctions between each of the three species.

MICROTARSUS has the first primary very narrow and short, the 2nd of considerable length, the 4th largest and the two following subequal to it; the tail is rounded, the middle feathers the longest and the rest slightly gradated; the feathers on the rump are very full and the lower tail coverts short; the feet and toes are rather strong.

BRACHYPODIUS has the 1st primary very short, the 2nd again of considerable length, the following gradated up to the fifth, which is longest, and the others rapidly decrease in length; the tail is rounded, the central feathers longest, the others gradually decreasing in length, and the outermost are considerably shorter; tail coverts long, feet and toes feeble.

IXIDIA has the 4th primary the longest, the 5th and 6th very little shorter and equal, the tail squarish, the middle feathers being shortest, and the outermost a trifle longer; lower tail coverts short, much in form resembling *Pycnonotus*, feet and toes feeble.

Fam. ORIOLIDÆ.

65. *ORIOLOUS XANTHONOTUS*, H o r s f i e l d.

Res. Java with fig.; B l y t h in Cat., p. 215; Pl. Col. 214.

H o r s f i e l d's figure of the male is evidently taken from a specimen not in fully developed plumage, for in this state of plumage the black is quite pure and the yellow above much more bright, the edgings of the primaries are very distinct and pure white, while the secondaries and tertiaries are very faintly edged with pure yellow.

What H o r s f i e l d describes as the female is no doubt a young bird, and probably a male; it corresponds with B l y t h's *O. castanopterus** which is based upon a young bird from Malacca, as recorded by Mr. B l y t h himself.

The female in full plumage is almost uniformly dingy green above, yellowish in front of the head and round the eye, top of head somewhat darker; quills brown with pale edgings, secondaries brown on the inner, greenish on the outer webs, the latter color

* Journ. Asiat. Soc. Bengal, Vol. XI, p. 795.

gradually increasing till the last tertiaries become wholly green, most of the secondaries and tertiaries are sometimes narrowly tipped with yellowish brown, a few of the median wing coverts are externally distinctly edged with chestnut; tail green above, the two median feathers wholly so, the others blackish on the terminal half of the inner webs and terminating with a yellow tip, both the black and yellow increasing towards the outermost tail feathers. Below, chin and throat whitish with a very slight greenish tinge, breast and vent with elongated dark brown blotches as in the ♂, lower tail coverts pure yellow, tail feathers below greenish. The young have the back and wing coverts more or less brown and the other colors of the ♀ less pure.

This species seems common about Malacca, and is very common in the Wellesley Province, being constantly seen flying about immediately one passes through the cocoanut forest in the interior. Its habits and call are entirely that of other Oriols and so is also its coloration. ♂, wing $4\frac{1}{8}$ - $4\frac{1}{4}$ inches; tail about $2\frac{1}{2}$ " ; bill at front $\frac{1}{16}$ "- $\frac{1}{16}$ " ; from gape $\frac{1}{16}$ "- 1 " ; tarsus $\frac{1}{16}$ " ; the ♀ is of the same size as the ♂, or slightly smaller.

As compared with other allied species the size is somewhat small and the bill distinctly hooked at the tip, but these are, I believe, not sufficient characters, upon which subgenera could be based, and, therefore, Bonaparte's name *Xanthonotus* appears to me to have no claim to be accepted as a distinct appellation.

Fam. IRENIDÆ.

66. IRENA PUELLA, Lath. (var. *cyanea* Begbie).

I. Malayensis, Moore, vide Walden in Ann. and Mag. Nat. Hist. V, 1870, p. 417.

It was, I think, Blyth who first pointed out, years ago, the constant smaller size of the Malayan as compared with the Indian bird, but on account of the identity in coloration, he considered the two races as belonging to one and the same species, *I. puella* of Latham, (Jerdon, B. India, II, p. 105). There are probably few ornithologists who, after having seen large series of this species, would not follow Blyth in his determination, and though the question of India, Malaya and Java, each being

inhabited by a distinct species, lately appears to have been finally settled by one of our most able ornithologists (Visc. Walden, loc. cit.), I still think that these so-called species (*puella*, *cyanea* and *turcosa*) should only be considered as local races of one and the same bird. Of course the question entirely rests in the name, but as long as there are no other distinctions developed, than those pointed out between these local races, it would be preferable not to rank them as species, for such instances are exactly those which leave the definition of a species quite optional to every naturalist without an attempt of making the idea of a specific character a generally applicable one. It is true that the Indian bird is generally larger, but there certainly are exceptions to this, and specimens from Assam, Arracan and Burma are sometimes quite as large as the Malabar bird, while others from the same localities are smaller. A ♀ from the Wellesley Province has the wing $4\frac{3}{4}$ "", tail $3\frac{3}{4}$ "", upper tail-coverts 1" shorter than the tail, lower tail-coverts a little shorter than the upper; bill at front $\frac{1}{16}$ "", from gape $1\frac{3}{16}$ ""; tarsus $\frac{1}{16}$ ". Of two Malacca specimens one has the wing $4\frac{5}{8}$ "", the other $4\frac{1}{2}$ ""; tail in both $3\frac{1}{2}$ "", and the upper tail-coverts are $1\frac{1}{8}$ inch shorter in one, and only 1 inch shorter in the other specimen, bill at front $\frac{7}{8}$ "", from gape $1\frac{1}{8}$ "", tarsus barely $\frac{1}{16}$ ". I can see no striking difference in the lazuline or blue coloration of ♂ and ♀ specimens from South India and those from Burma, and again between these and others from Malacca, but the latter are the smallest. It appears that the size of the bird becomes, through some cause or other, smaller the more southward we proceed in the narrow strip of land of the Malayan Peninsula, but when we arrive at the larger islands, like Java and Sumatra, the birds again appear to increase in size, equalling those of Burma. One point is certainly clear, namely, that the greater length of the tail-coverts in the Malayan bird as compared with the Indian is *not constant*. Lord Walden admits that there is no difference in the color of the Java and Malayan ♀ birds; I have not seen ♂ Java specimens.

Fam. LANIIDÆ.

67. LANIUS LUCIONENSIS, L i n n.

Walden, Ibis, 1867, p. 215.

The more ashy (than rufous)* variety, which has been noted from the Andamans, also occurs in the Wellesley Province. The color and size ($7\frac{1}{2}$ "') quite agree with the brief notice of the species in L a t h a m ' s Ind. Ornith. ; wing $3\frac{1}{2}$ " ; tail $3\frac{3}{8}$ " ; bill at front $\frac{9}{16}$ " , from gape $\frac{3}{16}$ " ; tarsus $\frac{3}{16}$ " .

68. LANIUS MAGNIROSTRIS, L e s s .

W a l d e n , Ibis, 1867, p. 220, pl. vi, cum syn.

A specimen from the Wellesley Province exactly agrees with E y t o n ' s description of Malacca specimens, (*L. strigatus*), it may be perhaps a trifle smaller. The short bristle-like feathers covering the nasals, and the anterior lower angles of the eyes are black, the lores above partially whitish ; chin pure white ; head pale rufous ashy, some of the feathers on top white shafted and subterminally slightly black ; wing $3\frac{1}{8}$ " ; tail $2\frac{3}{4}$ " ; bill at front $\frac{9}{16}$ " , from gape $\frac{7}{8}$ " ; tarsus $\frac{7}{8}$ " ; hind toe $\frac{9}{16}$ " . This specimen appears to be a young male, which accounts for its dimensions being less than those of any of the three specimens noted by Lord W a l d e n .

Another specimen, slightly larger, from the same locality, quite agrees in coloring with the above, and this is rather remarkable, but I suppose it is also a young bird ; both were obtained at the beginning of September.

69. TEPHRODORNIS SORDIDA, W a l l a c e †

Teph. gularis, auctorum (from Malacca), nec R a f f l e s .

This Malayan species, which extends northwards into the Wellesley Province and occurs on Penang, is exactly intermediate between the Indian *T. pelvica*, H o d g s ., and the Sumatra *gularis*, R a f f l e s , (*T. virgatus* apud T e m m ., Pl. Col.). It has a coloration very similar to the former, and the size (total length 7") is that of the latter.

Above pale ashy brown, a little less ashy on the wings and tail, darker on the inner webs of the wing feathers, rump with a small white patch ; forehead and a narrow superciliary stripe slightly paler ashy than the rest of the head, streak extending from the

* Very slightly on the head and more distinct on the upper tail coverts.

† I believe Wallace proposed this name for the Malacca bird, but I cannot just now give the exact reference.

lores through the eye brownish black, shoulder edge of wing white, lower wing coverts ashy brown; mustachial streak extending from the base of the lower mandible posteriorly white; below, cinereous white, paler on the chin, very slightly rufescent at the sides of the breast and passing to white on the vent and lower tail coverts; wing 4"; tail $2\frac{7}{8}$ "; bill at front very nearly $\frac{3}{4}$ ", from gape slightly more than 1"; tarsus $\frac{5}{8}$ ".

The bill of this section of *Tephrodornis*, including the present species, *pelvica* and *gularis*, is very much like that of *Turdirostris*, but the feet are very feeble, and the tarsus as short as in *Hemipus*. The Malayan form is especially distinguished by its unusually feeble feet, as compared with the size of the bird. I do not think, however, that there is sufficient ground for a generic separation of these species from *Tephrodornis*, but if a special section should be thought convenient, H o d g s o n ' s name *Tenthaca* would have priority before *Tephrolanius*.

70. VOLVOCIVORA CULMINATA, H a y.

Ceblepyris culminatus, A. H a y, Madras Journ., 1845, XIII, pt. II, p. 157.

I have not seen this species except from Malacca, wherefrom the type specimen was described, and even here the bird does not seem to be common. A female specimen is bluish ashy above, darker on the wings and tail, slightly rufescent at the base of the beak, the wing coverts are margined paler, and the outer tail feathers are strongly blackish; sides of head and below dull white, with narrow transverse blackish stripes; the three outer pairs of tail feathers are tipped white; wing $3\frac{5}{8}$ "; tail $2\frac{7}{8}$ ", bill at front $\frac{1}{2}$ ", from gape $\frac{7}{8}$ ", tarsus $\frac{3}{4}$ ". The Malacca species is smaller than *V. saturata*, lately described by S w i n h o e, (Ibis, April, 1870).

B l y t h and J e r d o n suggest that this species is probably identical with T e m m i n c k ' s *fimbriata*. Comparing T e m m i n c k ' s figure of the female specimen (Pl. Col. 250) with the one noted above, the Malacca bird appears to be a little smaller, while T e m m i n c k ' s species wants the rufescent color on the upper base of the bill, it also has the chin much purer white and contrasting with the greyish white tint of the rest of the lower parts,

all tail feathers and the longer coverts of the wing are tipped white. Until more sufficient proof of the probable identity of both has been given, it will be preferable to retain H a y ' s name.

71. BUCHANGA INTERMEDIA, B l y t h.

Dicrurus intermedius, B l y t h, J. A. S. B., XV, p. 298. See also W a l d e n in Proc. Zool. Soc. Lond., 1866, p. 545.

Whole plumage black, glossed with bluish green on the head, neck, back, scapulars and breast, slightly less on the upper tail coverts and the outer webs of the tail feathers; below blackish, some of the feathers on the middle of lower breast and vent tipped white, lower vent and sides dark cinereous; lower tail and wing coverts black with white tips; wing $5\frac{1}{2}$ " ; middle tail feathers $4\frac{1}{2}$ " , outer $5\frac{1}{8}$ " ; bill from the front of the nostrils to tip $\frac{3}{4}$ " , the nude portion only $\frac{9}{16}$ " , from gape very nearly $1\frac{1}{4}$ " ; tarsus $\frac{3}{4}$ " . This (apparently young) specimen shot near Malacca, only differs from B l y t h ' s type (in the Museum) by having the wing and the bill slightly longer, and by the few whitish spots on the belly and the lower tail coverts, which are more uniform dark ash in the type (the wing and outer tail feathers of which are about $5\frac{3}{16}$ " each). Both are undoubtedly identical and the same as Burmese specimens, but distinct from the Javanese *cineraceus*.

72. DISSEMURUS MALAYENSIS, H a y apud B l y t h.

Edolius paradiseus, L i n n., var. auctorum, J. A. S. B., XV, p. 294.

This appears to be in part the Tenasserim form which B l y t h (J. A. S. B., XI, p. 800, fig. 8-9) formerly referred to *D. Rangoonensis*, but which is smaller than this species; it occurs in the Wellesley Province and on Penang. J e r d o n says that T e m m i n c k ' s name *setifer* is applicable to this species. The upper black plumage has a steel blue lustre on the head, and on neck and back, greenish posteriorly and on the wings, frontal crest about $\frac{5}{8}$ " long and $\frac{1}{2}$ " high; lores and ear coverts dull black; chin almost dull, throat purplish blue, passing into a greenish lustre on the breast and gradually disappearing on vent, lower tail coverts tipped white. Younger specimens have the lower plumage mixed with white; wing $5\frac{1}{2}$ " ; middle tail feathers nearly 5" , outer nearly 12" ; bill from the nostril $\frac{3}{4}$ " ; from gape $1\frac{5}{16}$ " ; tarsus $1\frac{5}{16}$ " ; the terminal portion of the outer web

of the outermost tail feathers very narrow, that of the inner larger and very much broader. Specimens from the Wellesley Province exactly agree with the type specimen in the Society's collections.

This is a decidedly smaller race than *D. affinis*, Tytler, (Ibis, 1867, p. 323) from the Andamans, which appears to be very doubtfully distinct from *Rangoonensis*. Burmese specimens almost perfectly agree with Gould's original description of the last-named species.

73. PERICROCOTUS FLAMMEUS, Forst. ?

Jerdon, B. Ind. I, p. 420; an *Per. elegans*, McClelland, Proc. Zool. Soc. Lond. 1839, p. 156!

One ♀ specimen, from the Wellesley Province, is intermediate in size between *speciosus* and *flammeus*; the general coloring and especially the wing spots agree with the latter, except that the terminal yellow spots on the last tertiaries are very small. The top of head is somewhat blackish ashy, yellowish in front and the yellow tinge extends to half the length of the crown; Temminck's figure shews it perfectly yellow. The lores are black. The head above is peculiarly flattened, which McClelland says is characteristic of his *P. elegans* from Assam, and as this is said to differ from *speciosus* (= *princeps*) by its smaller size, I do not think it improbable that McClelland's species will be shewn to be distinct from *flammeus*. Wing $3\frac{1}{2}$ " ; tail about $3\frac{1}{4}$ " bill at front and tarsus $\frac{1}{2}$ " each.

Godwin-Austen quotes *P. flammeus* from Assam, but without further notice of any peculiarities (Jour. Asiatic Soc. B., XXXIX, p. 99).

The Malayan specimen is not the female of *P. igneus*, Blyth, (Jour. Asiat. Soc. XV, p. 309), described from a Malacca specimen, which is a much smaller bird, but it may be the same as Tytler's *Per. Andamanensis* (Ibis, 1867, p. 322), being apparently only a trifle larger.

Fam. MUSCICAPIDÆ.

74. PHILENTOMA VELATA, Temm.

Dryophila velata, Tem. Pl. Col. 334.—Eyton in Ann. and Mag.

N. H., 1845, XVI, p. 229.—*Muscicapa pectoralis*, A. H a y, Madras Journal, XIII, pt. II, 1845, p. 161.

♂. Above and lower breast, vent and under tail coverts light cinerous blue, forehead, lores, a very narrow superciliary stripe, cheeks, ear-coverts and chin, inner webs of wing feathers, the same of the tail feathers,—with the exception of the two central ones,—black; throat and front of breast extending somewhat to the sides deep castany brown; wing $3\frac{3}{4}$ " ; tail $3\frac{1}{2}$ " ; bill at front $\frac{9}{16}$ " , from gape $\frac{7}{8}$ " ; tarsus $\frac{1}{16}$ " ; rictal bristles nearly $\frac{5}{8}$ " .

♀. Uniform ashy blue, slightly deeper than the male, forehead, chin and throat somewhat blackish; wing $3\frac{5}{8}$ " ; the other measurements the same as in ♂.

T e m m i n c k described the species from Timor and Java. It is common about Malacca, and in the Wellesley Province.

75. MYIAGRA AZUREA, B o d d.

J e r d o n, B. Ind., I, p. 450.

Specimens from the Wellesley Province exactly correspond in size with the Indian bird. The rictal and narine bristles and the short feathers in front on the upper and lower mandibles are pure black in the ♂, most of the wing feathers and the outer webs of the tail feathers are indistinctly barred across with a duller color than that of the general plumage.

Fam. SYLVIIDÆ.

76. COPSYCHUS MINDANENSIS, G m e l.

G o u l d, Birds of Asia, pt. XV.

This is so closely allied to the Indian *C. saularis*, that the propriety of a separate appellation seems doubtful. I shot a pair near the coast of Wellesley Province, just opposite Penang. The male is somewhat larger than the female, in the former the wing is $3\frac{3}{4}$ " and the tail $3\frac{1}{2}$ " , in the latter wing $3\frac{1}{2}$ " and tail $3\frac{1}{4}$ " ; both these measurements are somewhat less than those given by J e r d o n of *C. saularis* ; but the length of the bill is in both the same. The ♂ has the front edge of the wing partially white and the ♀ spotted with grey; the back in the ♀ is a little darker than usually seen in Bengal *saularis*, but the throat and breast are equally ashy and

the sides of the vent quite similarly buffy grey in both. It would be interesting to make a close comparison of a good series of Burmese specimens, for these are usually referred to our common Indian form.

77. *CITTACINCLA MACRURA*, Gmel.

Jerdon, B. India, II, p. 116.

Jerdon calls the breast first black and then chestnut, the colors refer to the anterior and posterior part of the breast respectively. Two specimens from the Wellesley Province and one from Malacca, each has the wing $3\frac{5}{8}$ " and the bill at front $\frac{9}{16}$ " being, like in *Copsychus mindanensis*, slightly less than the usual measurements of Indian specimens. The Malacca specimen has the two last secondaries slightly tipped with white. All three specimens are males and the upper plumage is in all glossy purplish black.

Fam. *AMPELIDÆ*.

78. *LOPHOCITTA GALERICULATA*, Cuv.

Leveillant, Ois. de Par. and Roll. pl. 42.

Common at Penang and in the Wellesley Province. The ♂ has the black almost quite pure on the head, and the ♀ is more olivaceous brown on the back, but I did not see such brown specimens as described by Raffles; all feathers composing the crest are indistinctly cross barred with dull black and the longest attain 4 inches. There is always a small white spot on the posterior part of the eyelid, above and below. When seen alive in the dense forests, which these birds usually inhabit, they look like gigantic *Lophophanes*. Total length 10-11 inches; wing $5\frac{1}{2}$ "- $5\frac{5}{8}$ "; tail $4\frac{1}{2}$ "-5"; bill at front $1\frac{1}{8}$ ", from gape $1\frac{1}{4}$ "; tarsus $1\frac{1}{4}$ ".

79. *MELANOCHLORA SULTANEA*, Hodgk.

Jerdon, B. Ind. II, p. 282; Gould, B. Asia, pt. XX.

I obtained numerous specimens from Malacca and the Wellesley Province; they are mostly somewhat smaller than Indian specimens, the wing being only $3\frac{3}{4}$ ". The lower of the longer wing coverts are generally tipped pale yellowish white and the front-edge of the wing is also yellowish; only in one ♀ specimen the pale tips of the wing coverts are entirely absent, they appear to

have been worn off, but instead of this the primaries are externally edged pale. The yellow crest appears to be very often somewhat shorter in Malayan, than it is in Indian specimens.

Fam. STURNIDÆ.

80. CALORNIS CANTOR,* G m e l.

This species is found in Penang and in the Wellesley Province, but does not appear to be common; wing $3\frac{5}{8}$ "— $3\frac{3}{4}$ "; tail $2\frac{1}{8}$ "; bill at front $\frac{5}{8}$ "; from gape about 1"; tarsus $\frac{1}{1}\frac{3}{6}$ ".

A specimen which may possibly be a young bird of this species, is greyish brown above, blackish on the wings and tail, with a very slight greenish gloss throughout, most distinct on the outer webs of the wing and tail feathers; below ashy white on chin and throat, purer white on breast and vent, marked throughout with dark brown streaks, each feather being thus colored along the centre; wing $3\frac{1}{2}$ "; tail $1\frac{3}{4}$ "; bill at front $\frac{1}{2}$ ", from gape $\frac{7}{8}$ "; tarsus $\frac{1}{1}\frac{3}{6}$ ". None of the feathers on the head and throat are elongated and cuspidate, the bill is brown and apparently that of a young bird, being very short. The general character of the specimen is that of *C. cantor*, but the difference in size is very striking. Unless the different phases of plumage of this last species have been properly studied, it would be of no advantage to look upon the present single specimen as belonging to a new species.

80. *Eulabes Javanensis*, O s b e c k.

There seems to have been, as in the case of *Irena puella*, L a t h., a little too much stress laid upon local variations of apparently the same species of bird. I will first record a short description of a specimen from Malacca and one from the Wellesley Province.

The coloration of the two birds is exactly the same. The lateral stripes of velvet feathers, narrowest (and in one specimen almost interrupted†) above the front angle of the eye, the lores, below the anterior front of the eye, and the oblique streak through the nude

* H o r s f i e l d (Cat. Ind. H. Museum, p. 543) retains his name *chalybeus* for the species and doubts its identity with G m e l i n ' s *cantor*.

† I have seen specimens of *E. intermedia*, certainly brought from Oude, in which the velvet bands were *not* interrupted above the eyes, though very narrow at that place. I do not think that this character is reliable in distinguishing the various races.

skin below the eye have in certain lights a greenish metallic lustre, front and middle portion of the head, neck, the upper part of the back and of the scapulars, chin, throat, and breast are glossed purplish, lower back, rump, vent and both tail coverts are glossed greenish. The nude patch of the skin begins at the lower half of the eye, is broadest here, and becomes narrower posteriorly, where the flaps are semi-circularly prolonged; in both they are narrowly connected at the base. There can be, I believe, not the least doubt that the two birds belong to one and the same species. Both the specimens have the bill not larger than most *E. intermedia*; in fact I have seen Indian specimens of the latter which had the bill longer. Jerdon says that the height of the bill in *Javanensis* is $\frac{1}{6}$ "', this appears to have been taken from a specimen in the Asiat. Soc. Coll., and seems very unusual, if not abnormal. The size of the wing of the Malacca specimen approaches that of the Javanese one, but the tail is as short as in *intermedia*; the wing of the Wellesley specimen is equal to that of a large *intermedia*, but the tail is quite as long as in the largest specimens from Java on record. This clearly shews that the birds vary in some or other point almost from every other locality. Jerdon (B. Ind. II, p. 339) observes that *intermedia* certainly extends from India into Burma as far south as Tenasserim, and specimens from the last locality are perfectly equal in size to those from Assam.

The reference to the size of birds from a particular province must be always considered as that of the usual average to be observed. Lord Walden (Mad. Journ. XIII, pt. II, p. 156) considered the Malacca bird to be the same as the Javanese, but distinct from the Indian *intermedia*. Lately (Ibis, III, 1867, p. 331) the same author appears to be inclined to add a third species to the number, called by Tytler *Andamanensis*, and another, (or the same form) was described as *Graucula dubia* by Schlegel in Nederl. Tijdsche. voor de Dierkunde, 1863, p. 7. I cannot unfortunately just now refer to the description of this last bird, nor have I any true Javanese specimens to compare, but I shall briefly record the measurements and general characters of a number of specimens in the Asiatic Society's Museum, together with those above described from Malacca and the Wellesley Province. From

all the existing records, it seems certain that the Javanese and Southern Malayan birds are perfectly identical in size.

Measurements in inches.

	Nepal (Terai).	Arracan*	Andaman.	Nicobar.		Wellesley Province.	Malacca.	
	1	2	3	4	5	6	7	8
Wing,	$6\frac{1}{4}$	$6\frac{1}{2}$ - $6\frac{3}{8}$	$6\frac{1}{2}$	$6\frac{1}{2}$	$7\frac{3}{16}$	$6\frac{1}{2}$	$6\frac{7}{8}$	7
Tail,	3	3 - $3\frac{1}{8}$	3	$3\frac{9}{16}$	$3\frac{1}{2}$	$3\frac{5}{16}$	3	$3\frac{1}{8}$
Bill at front, .	$\frac{1.5}{16}$	$\frac{1.3}{16}$ -1	$\frac{1.5}{16}$	1	$1\frac{1}{8}$	1	1	1
Bill from gape,	$1\frac{6}{16}$	$1\frac{1}{2}$ - $1\frac{6}{16}$	$1\frac{9}{16}$	$1\frac{9}{16}$	$1\frac{5}{8}$	$1\frac{10}{16}$	$1\frac{11}{16}$	$1\frac{11}{16}$
Height of bill,..	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$\frac{1}{2}$	$1\frac{10}{16}$	$\frac{9}{16}$	$\frac{9}{16}$	$\frac{9}{16}$
Tarsus,	$1\frac{5}{16}$	$1\frac{1}{2}$	$1\frac{6}{16}$	$1\frac{3}{8}$	$1\frac{5}{8}$	$1\frac{3}{8}$	$1\frac{1}{2}$	$1\frac{1}{2}$

1, 2, 3, 5, 8, are from *Asiat. Soc. Coll.* ; 4 from *Mr. V. Ball* ; 6 and 7 were procured in the localities cited.

The coloration of all the birds is exactly the same, and the form of the nude skin at the side of the head below the eye agrees in all. The size of the posterior occipital flaps increases with the size of the bird, and their length varies according to the sex and apparently also according to the season. I saw in Penang two male birds in a cage, and one of them had the occipital flaps almost an inch long.

On comparing the Nepal with the Nicobar or Malacca bird, nothing would appear more averse than saying that those two were identical, though every one will admit that the only difference is the size. But in putting a series together geographically arranged, and observing the gradually diminishing size from the Nicobar and Malacca bird to that from the Wellesley and Tenasserim Provinces, and the Andamans, and from this again to that from Arracan and the Khasi hills, we arrive at the comparatively pigmy bird of the Nepal Terai, and the ornithologist will find it extremely difficult to characterize all these forms as distinct species. My belief is, that

* Specimens from the Khasi and Garro hills in the *Indian Mus. Coll.* are exactly the same, as those from Arracan.

we have in these birds nothing more than local or geographical races of the same species, and the present example appears to me particularly illustrative of the gradual change in the size of typical Malayan forms, when they extend northwards. Whether such geographical races are for the advantage of science favoured with separate distinct names, seems to me very doubtful.

Fam. FRINGILLIDÆ.

81. MUNIA RUBRONIGRA, H o d g s.

J e r d o n, B. India, II, p. 353.

A single specimen was obtained in the Wellesley Province. In size it resembles *M. sinensis*, (? G m. apud L a t h a m, not = *maya*) which, according to J e r d o n, has no dark abdominal streak, while this specimen has it distinct, though not black, but dark brown, as are likewise the lower tail coverts. Other details of coloration agree exactly with the Indian form, except size, the Malayan form being smaller, wing $1\frac{1}{8}$ " ; tail $1\frac{1}{4}$ " ; bill at front not quite $\frac{1}{2}$ " ; tarsus $\frac{9}{16}$ ".

L a t h a m (Ind. Ornith. I, p. 386) quotes the true *L. Malacca* from "China, Java, Malacca," and of the present species he says "habitat cum priore," but it does not appear certain that this last extends southwards into the Philippine islands, wherefrom W a l l a c e and others mostly only quote *M. Malacca*.

82. MUNIA MAYA, L i n n.

L a t h a m, Syn. III, 151 ; B l y t h, Cat. 116, No. 620 and ? 621.

In style of coloration, this species very much resembles *M. Malacca*, but the head and anterior part of neck are white, gradually paling, the throat posteriorly albescent brown, the general color dull brown, but the bright glistening color of the upper tail coverts is the same as in *Malacca*; middle of breast, of the abdomen, tibial and under tail-coverts deep brownish black ; wing 2", tail $1\frac{3}{8}$ " , bill at front nearly $\frac{7}{16}$ " ; tarsus $\frac{9}{16}$ ". Apparently not common in the Wellesley Province ; L a t h a m gives it from Malacca, and it is no doubt identical with *zeucocephala*, R a f f l e s, from Sumatra, as recorded by B l y t h.

A Batavian specimen of this species is entered by B l y t h in his Catalogue as "*M. ferruginosa*," "Syn. *Loxia ferruginosa*, L a t h a m." I do not know where L a t h a m published that name, he has a *L. ferruginea* (Ind. Ornith. I, p. 389), but that is not the same bird.

83. MUNIA ACUTICAUDA, H o d g s.

J e r d o n, B. India, II, p. 356.

Wing $1\frac{7}{8}$ " ; tail $1\frac{1}{4}\frac{1}{8}$ " ; bill very little more than $\frac{3}{8}$ " ; tarsus $\frac{7}{16}$, the central tail feather $\frac{1}{2}$ " longer than the outermost. Specimens from the Wellesley Province, exactly agree in colouring with the Indian bird, but they are slightly smaller as compared with the measurements given by J e r d o n. Visc. W a l d e n (Proc. Z. S. L. 1866, p. 552), says that a Moulmein specimen is larger than a Darjeeling specimen in his collection, but that Formosan specimens agree better with the Himalayan race. Thus slight variations seem to occur locally, but they did apparently not yet attain to such prominent distinctions, that they could form the basis of new species!

Fam. COLUMBIDÆ.

84. TRERON [OSMOTRERON] VERNANS, L i n n., 1771.

? *C. viridis*, S c o p., 1777, non *viridis*, L i n n.

Wing $5\frac{6}{8}$ " ; tail $3\frac{1}{2}$ " ; bill at front little more than $\frac{1}{2}$ " , from gape $\frac{1}{16}$ " ; tarsus $\frac{5}{8}$ ". This species does not appear to extend farther north than the Wellesley Province and Penang, and is already rare in these localities, but it is common on all the southern islands, Sumatra, Java, Borneo, &c.

85. TRERON [OSMOTRERON] OLAX, T e m m.

Wing $4\frac{3}{4}$ " ; tail very nearly 3" ; bill at front $\frac{1}{2}$ " , sometimes very thickened on the terminal half ; tarsus $\frac{3}{4}$ ". Not uncommon about Malacca, Penang and the Wellesley Province, the latter being apparently the northern limit of the geographical extent of the species.

86. PHILINOPUS (RAMPHICULUS) JAMBU, G m e l.

R a f f l e s (Trans. Linn. Soc. XIII, pt. II, p. 316) gives this species from Sumatra and S c l a t e r (Proc. Z. S. L., 1863, p. 221) from Borneo. It extends northwards into the Wellesley Province, but does not appear to be equally common as at Malacca. Young ♂♂ are at first quite of the colouring of the ♀♀ ; those I obtained in September were already changing their plumage, which, however, does not become fully developed until the next year.

A specimen from the Wellesley Province has the wing only $5\frac{1}{4}$ " (Malacca specimens have it $5\frac{1}{2}$ "); tail $3\frac{1}{2}$ "; bill at front $\frac{5}{8}$ "; tarsus $\frac{5}{8}$ ".

87. CHALCOPHAPS INDICUS, L i n n.

J e r d o n, B. Ind., III, p. 484.

The two dark bars on the rump are in Assam and Cachar specimens, as well as in the Malayan bird, always very conspicuously greenish golden in both sexes, the feathers being grey at the base and of a deep greenish brown at the tips, the bars between them are light grey. In specimens from the Wellesley Province, the wing is in the old ♂ $5\frac{9}{16}$ "; tail $3\frac{1}{2}$ "; bill at front very nearly $\frac{3}{4}$ "; tarsus $\frac{1}{16}$ "; the corresponding measurements in an old ♀ are: $5\frac{1}{4}$ "; $3\frac{1}{4}$ "; $\frac{5}{8}$ " and $\frac{1}{16}$ ". In the male the occiput and anterior neck above is ashy, this color being almost interrupted in the middle of the neck by the vinaceous brown color at the sides, but it becomes again very conspicuous at the posterior neck, spreading out on the shoulders. This is thought characteristic of *javensis*, and Raffles mentions this state of coloration in the Sumatran bird, which cannot differ from *indica*. The ashy on the posterior neck and between the scapulars is usually not so well developed in Indian specimens, as in the Malayan, but it is always indicated, especially in specimens from Assam and Burma.

If no other distinction exists between *javensis* and *indica*, than the one alluded to, I should certainly consider both as identical. There would seem to be no constant difference between them; the size is certainly not one of the differences recorded.

88. MACROPYOGIA RUFICEPS, T e m m.

B l y t h (in Catalogue, p. 234, No. 1423) appears to refer to this species under the name of *Amboinensis*, L i n n., which seems to be a considerably larger bird. L a t h a m gives the total length of this 14 inches, while that of the Malayan bird is barely 11". A specimen from the Wellesley Province measures: wing $5\frac{1}{4}$ "; tail $5\frac{5}{8}$ "; bill at front $\frac{1}{2}$ "; from gape nearly $\frac{3}{4}$ "; tarsus $\frac{5}{8}$ ".

H o r s f i e l d (Trans. Linn. Soc. XIII, pt. I, p. 184) mentions that the Javanese bird has the upper part of the neck covered with a purple gloss. T e m m i n c k's figure represents it strongly metallic green, and the breast not spotted; this must apply to the plumage of

old males. In the specimen from the Wellesley Province, which is apparently a female, the posterior neck and back are blackish brown, with a very slight green metallic tinge on some of the feathers, but all are minutely freckled with rufous brown, somewhat less conspicuous on the middle back; but the red is again much more prevalent on the rump and upper tail coverts; the whole head above is rufous brown, chin whitish rufescent; throat posteriorly and front of breast irregularly spotted with black. The specimen agrees in other respects with the Javanese bird. *Amboinensis* is often quoted by Wallace from the various islands of the Philippine Archipelago, but *ruficeps* does not appear to occur there.

89. TURTUR TIGRINUS, Temm. (? ?).

? *T. Suratensis*, Gmel., Jerdon, B. Ind. III, p. 79.

Wing and tail $5\frac{1}{2}$ " each; bill at front $\frac{1}{3}\frac{1}{8}$ "; from gape $\frac{1}{3}\frac{4}{8}$ "; tarsus very nearly 1"; a narrow black loreal stripe appears constant in male specimens; the white and posteriorly brownish tips of the collar are squarish, not rounded.

The Malayan form is very like the Indian *T. Suratensis*, Gm., only a little smaller and having the back, like *Chinensis*, Scop., almost unspotted, the feathers being only narrowly tipped with pale brown, but all the wing coverts are blackish along their shafts, except the most anterior which are ashy white. I doubt that *tigrinus* is specifically distinct from *Suratensis*. Blyth, (Ibis, 1867, III, p. 150) says that he has not seen intermediate specimens. I saw specimens from Burma which had the two lateral spots on each of the feathers of the back distinct, while others had them nearly quite obsolete, or only indicated by pale terminal edgings, as in the Malayan *tigrinus*. Such minor differences should not be considered as specific distinctions, for they are not definable in nature.

This and other allied species of *Columbidae* do not appear to be so common in the Wellesley Province, nor at Penang and in the neighbourhood of Malacca, as are species of the *Treron* group.

90. GEOPHELIA STRIATA, Linn.

A single specimen was obtained in the Wellesley Province; the measurements are:—wing $3\frac{7}{8}$ "; tail $4\frac{1}{8}$ "; bill at front $\frac{9}{16}$, from gape

$\frac{11}{16}$ " ; tarsus $\frac{5}{8}$ " ; round the eye and loreal space naked. The species does not apparently extend into Burma. Blyth quotes *C. sinica*, Linn. and *malaccensis*, Gmel., as synonyms, but the characteristics, (especially of the latter), as given by Latham, are not applicable to the Malayan bird, which exactly agrees with specimens from the Mauritius.

Fam. PHASIANIDÆ.

91. POLYPLECTRON BICALCARATUM, Linn.

Gould, B. Asia, pt. XXII.

In the figure recently published by Gould the crest of the male is coloured uniform greenish. This would appear to be very unusual, at least as far as summer plumage is concerned. I had seen about 20 specimens with the dealers at Malacca and, as far as I remember, all had the frontal feathers barred across with dusky white, but the feathers on the crest of the female are generally uniform brown, with rather indistinct edgings of dark brown.

This species also occurs in the interior of Wellesley Province, but seems to be already here very rare.

92. GALLUS FERRUGINEUS, Gmel.

The more red and deeper coloured Malayan variety,* lately noticed by Blyth (in the Ibis), occurs in the Wellesley Province ; wing of cock $9\frac{1}{2}$ " ; outer tail feathers barely 12."

93. ROLLULUS CRISTATUS, Gmel.

Blyth, Cat. 253.

More common about Malacca than in the Wellesley Province and in Tenasserim. All the birds are perfectly identical.

Fam. TINAMIIDÆ.

95. *Turnix pugnax*, † Temm.

Blyth (Ibis, 1867, III, p. 161) says that *T. ocellata*, Scop. apud Jerdon (B. Ind. II, p. 597) should stand as *T. pugnax* of Temminck, *ocellata*, Scop. (= *luzoniensis*, Gm.) being quite a distinct species, and that both *pugnax* and *taigoor* are

* Only the posterior neck is golden yellow.

† *Tetrao Luzoniensis* of Raffles from Sumatra is, to all appearance, the same bird. Temminck's figure represents an unusually dark specimen.

insufficiently distinguishable, and, therefore could be brought together under the name *pugnax*, Temm., "subject to a certain amount of local variation." This appears to be a very fair view of the question, for comparing large series of these birds from different parts of India, from the Malayan countries and Java, it certainly appears extremely difficult to find any permanent distinctions strictly peculiar to each form, but to a certain extent the local varieties, or sub-species, generally possess some slight distinctive characters.

Typical Java and Malayan *pugnax* generally are the smallest of all. The head is dark, the pale brown edgings to the feathers being very narrow, the median occipital streak is dark and usually indistinct, the feathers of the back are scarcely margined laterally with pale, and those of the lower back and scapulars very little, generally only on the outer web. The longer scapulars and wing-coverts have pale yellowish, transverse, largely oval spots. Specimens from Malacca and the Wellesley Province, belonging to this race, have the wing only $3\frac{1}{8}$ "- $3\frac{1}{4}$ "; tail $1-1\frac{1}{8}$ " (rather long); bill at front $\frac{1}{2}$ ", from gape $\frac{3}{4}$ "; tarsus $\frac{3}{4}$ ".

The Himalayan race (*plumbipes*, Hodgk. s.), is very similar in its dark coloration to Malayan specimens, but the median streak on the head appears to be always more distinct, the chin and throat is less pure white in the male (?), and the blackish spots on the terminal outer webs of the tertiaries are more distinct. As to size, the North Indian and Himalayan specimens are the largest. Jerdon gives wing $3\frac{6}{10}$ ", tail 1", bill at front $\frac{9}{10}$ ", tarsus 1", and Himalayan specimens in the Asiatic Society's collection quite come up to these measurements. I have measured specimens with the wing $3\frac{3}{4}$ ".

The third form is *taigoor*, Sykes, (apud Jerdon), being intermediate in size between the two, and very similar to the latter in coloration, except that the feathers on the back generally are very distinctly margined laterally with pale or yellowish rufescent.

Looking at these variations, one cannot help to recall to mind the perfectly similar and corresponding variations in the plumage of *Turtur Suratensis*, *tigrinus* and *Chinensis*, and the variations in size are also something similar in the two series of races, at least as regards the Malayan and Indian birds.